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**AUGUST 2004**

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**ENVIRONMENTAL ASSESSMENT**

**MAINTENANCE DREDGING**

**INTRACOASTAL WATERWAY-VICINITY OF PONCE DE  
LEON INLET  
VOLUSIA COUNTY, FLORIDA**



**U.S. Army Corps  
of Engineers**  
Jacksonville District  
South Atlantic Division



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
JACKSONVILLE DISTRICT CORPS OF ENGINEERS  
P.O. BOX 4970  
JACKSONVILLE, FLORIDA 32232-0019

**FINDING OF NO SIGNIFICANT IMPACT**

**MAINTENANCE DREDGING  
INTRACOASTAL WATERWAY-VICINITY OF PONCE DE LEON INLET  
VOLUSIA COUNTY, FLORIDA**

I have reviewed the Environmental Assessment (EA) for the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are in summary:

a. The work would be conducted in accordance with the Biological Opinion issued by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The proposed action would not jeopardize the continued existence of any threatened or endangered species or impact any designated "critical habitat."

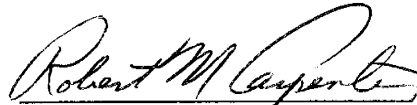
b. In coordination with the Florida State Historic Preservation Officer, it was determined that the proposed dredging and dredged material placement options would not adversely affect any sites of cultural or historical significance.

c. The Florida Department of Environmental Protection has issued a draft Water Quality Certification (WQC) for this project. All applicable water quality standards of the WQC would be addressed.

d. The proposed work has been determined to be consistent with the Florida Coastal Zone Management Program.

e. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources would be implemented during project construction.

10 Dec 04  
Date

  
Robert M. Carpenter  
Colonel, U.S. Army  
District Engineer

# ENVIRONMENTAL ASSESSMENT ON MAINTENANCE DREDGING INTRACOASTAL WATERWAY-VICINITY OF PONCE DE LEON INLET VOLUSIA COUNTY, FLORIDA

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**ENVIRONMENTAL ASSESSMENT  
ON  
MAINTENANCE DREDGING  
INTRACOASTAL WATERWAY-VICINITY OF PONCE DE LEON INLET  
VOLUSIA COUNTY, FLORIDA**

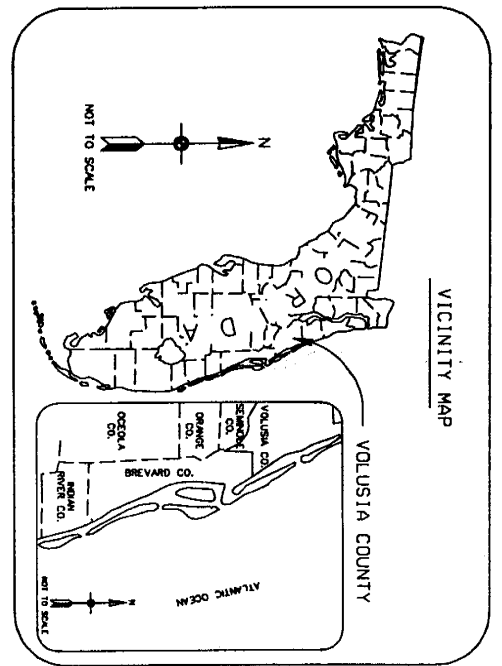
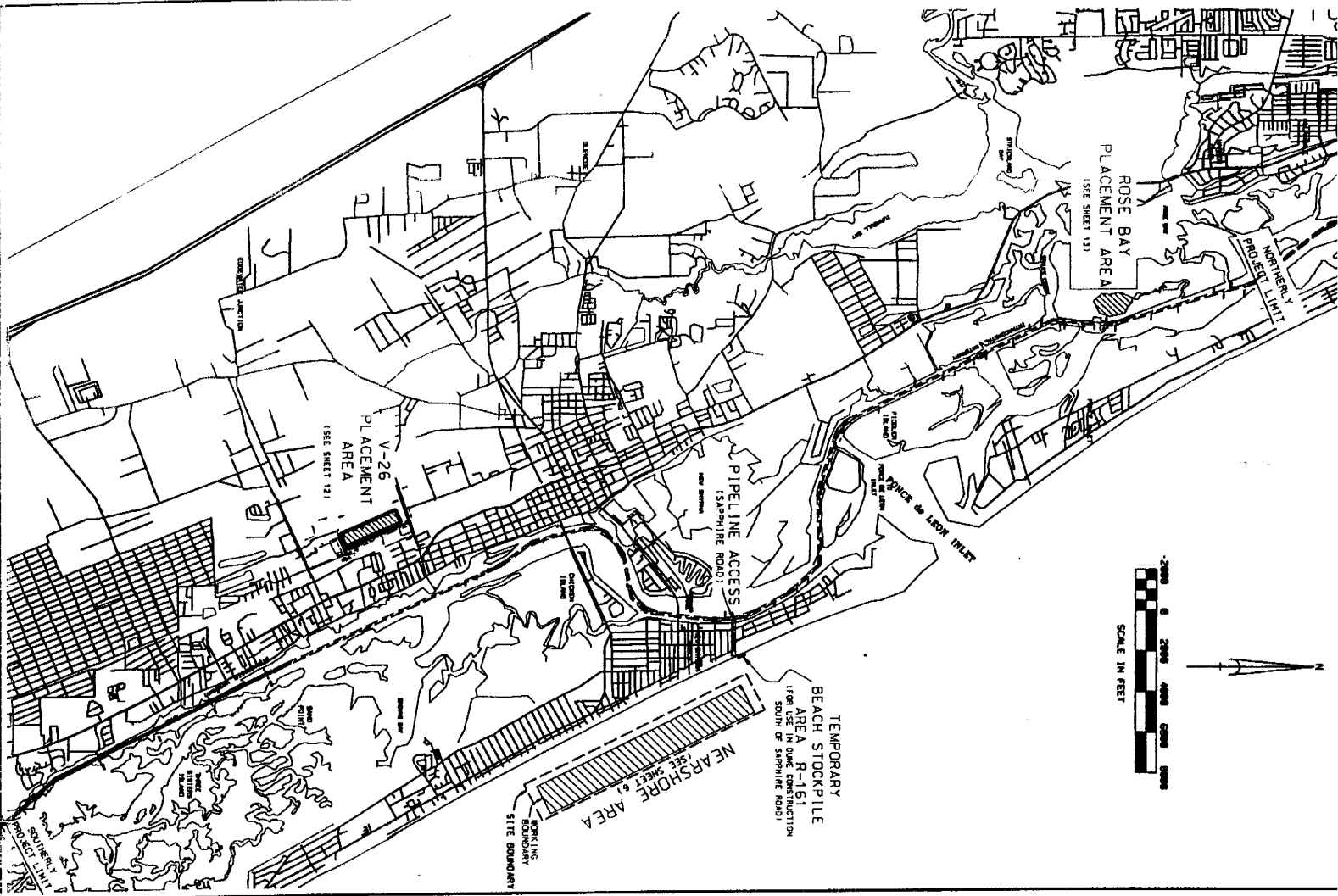
**1 PROJECT PURPOSE AND NEED**

**1.1 PROJECT DESCRIPTION**

The U.S. Army Corps of Engineers (Corps), Jacksonville District, is proposing to conduct maintenance dredging of the Intracoastal Waterway (IWW) in the vicinity of Ponce de Leon Inlet, Volusia County, Florida (see Figure 1, Site Map). This particular section of the IWW, cuts V-22 through V-40, has authorized dimensions of 125-feet wide and 12-feet deep plus 2-feet of allowable overdepth at mean low low water (m.l.l.w.). In addition to the dredging of the project channel, two new settling basins would be constructed at cuts V-23 and V-26. A third settling basin at cut V-24 is believed to be a pre-existing project feature and would also be dredged. Approximately 1,100,000 cubic yards of sand would be removed from the IWW in order to restore its authorized depths. An estimated 800,000 cubic yards of this total would be placed in the designated nearshore area located south of Ponce de Leon Inlet. The remaining 300,000 cubic yards of sand would be placed in Dredged Material Management Area (DMMA) V-26 located in the city of Edgewater. Up to 200,000 of the 800,000 cubic yards scheduled to go to the nearshore area may be used to construct shore protection dunes along the beach south of the inlet.

**1.2 PURPOSE AND NEED FOR THE ACTION**

Survey results indicate shoaling has occurred along the entire length of the IWW near Ponce de Leon Inlet with extreme shoaling being observed in cut V-23 (Corps Report of Channel Conditions 2002). Minimum depths, at m.l.l.w., of less than 2-feet and 3-feet have been recorded from sections of the right outside quarter and central portion of the project channel respectively. Commercial vessels, some of which require at least 9-feet of draft, are being forced outside the authorized channel in search of deeper water, waiting for high tides, or are prop dredging through this section of the IWW. As a result of these conditions, the U.S. Coast Guard has issued a Notice to Mariners stating that a hazardous situation exists due to shoaling in the vicinity of Halifax River Daybeacon 68 (cuts V-22 and V-23). Dredging would re-establish the navigable capacity of the project channel. A proposal was made to use the dredged material from the IWW to rebuild the shoreline along New Smyrna Beach that the state has classified as "critically eroded." However, the local community has voiced their concern on how this action could adversely impact the existing beach. In response to this concern, dredged material would only be used on the beach in order to create shore protection dunes.



# INDEX OF DRAWINGS (14 SHEETS)

SHEET	DESCRIPTION
1	LOCATION MAP
2	CHANNEL CONTROL DATA SHEET
3	CHANNEL CONTROL DATA SHEET
4	CHANNEL CONTROL DATA SHEET
5	--DELETED--
6	NEARSHORE PLACEMENT AREA
7	TYPICAL CHANNEL CROSS-SECTION
8	V-23 SEDIMENT BASIN & X-SECTION
9	V-24 SEDIMENT BASIN & X-SECTION
10	V-26 SEDIMENT BASIN & X-SECTION
11	CORE BORING LOCATIONS
12	V26 CONTAINMENT AREA (NEW)
13	LOST CREEK CONTAINMENT AREA (NEW)
14	TEMPORARY BEACH STOCKPILE (NEW)

Figure 1



DRAWINGS TO ACCOMPANY THE  
APPLICATION FOR WATER QUALITY  
CERTIFICATE SUBMITTED TO THE  
FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

APPLICANT: U.S. ARMY CORPS OF ENGINEERS

PROJECT: MAINTENANCE DREDGING, 12-FOOT PROJECT  
INTRACOASTAL WATERWAY, VOLUSIA COUNTY

DATE: REV. FEB 2003 SHEET 1 OF 14

### **1.3 PROJECT AUTHORITY**

Spanning nearly the entire length of Florida from Jacksonville to Miami, an 8 ft deep x 75 ft wide channel (IWW) was authorized January 21, 1927 by House document 586, 69<sup>th</sup> Congress, 2<sup>nd</sup> Session. The present configuration (12 ft deep x 125 ft wide) was authorized by House Document 740, 79<sup>th</sup> Congress, 2<sup>nd</sup> Session, 2 March 1945. The Corps is responsible for maintaining the authorized depths of the IWW. As the local sponsor, the Florida Inland Navigation District (FIND) is responsible for providing and maintaining the DMMA's. Specifically, the FIND provides lands, easements, right-of-ways, relocations, and DMMA's necessary to accomplish maintenance dredging of the IWW.

### **1.4 DECISION TO BE MADE**

This Environmental Assessment evaluated potential impacts caused by the proposed maintenance dredging and subsequent dredged material placement.

### **1.5 RELEVANT ISSUES**

The following issues were identified as relevant to the project and appropriate for detailed evaluation: (1) socio-economic impacts to individuals, families, and businesses harmed by or benefiting by the project; (2) beneficial or adverse effects to navigation; (3) recreational conflicts; (4) shoreline stabilization; (5) water quality degradation; (6) impacts to endangered and threatened species occurring within the project area (i.e. sea turtles, manatees, piping plover, right whale, and Atlantic salt marsh snake); (7) disturbance of nesting migratory birds; (8) impacts to vegetation; (9) alteration of wetlands and mudflats (10) potential damage to Essential Fish Habitat; (11) destruction of benthic communities, especially oyster beds; (12) cultural resource impacts; (13) modification of aesthetic quality; and (14) noise impacts to nearby residents.

### **1.6 NEPA DOCUMENTATION**

Pursuant to the National Environmental Policy Act (NEPA) of 1969, this document was prepared in order to assess the environmental impact of the proposed dredging and material placement options. Other NEPA documents prepared by the Corps and related to the planned action include Environmental Assessments on the maintenance dredging of cuts V-23 through V-29 (1993) and the dredging of Ponce de Leon Inlet (1998). An Environmental Assessment has been prepared for the proposed Section 206 Aquatic Ecosystem Restoration of Rose Bay (2002). NEPA documentation will also be required for the proposed Section 1135 Ecosystem Restoration of selected areas in the vicinity of Ponce de Leon Inlet and the IWW.

## **1.7 ENVIRONMENTAL COORDINATION**

### **1.7.1 WATER QUALITY CERTIFICATION**

A Notice of Intent to issue Water Quality Certification for the proposed maintenance dredging of the project channel has been obtained from the state of Florida pursuant to Section 401 of the Clean Water Act (see Appendix C). A modification to this certification shall be obtained for the three previously described widenings prior to performing work at these locations. In accordance with the Coastal Zone Management Act, the proposed dredging has been reviewed by the state and found to be consistent with the Coastal Zone Management Plan. This review is performed concurrently with the issuance of the water quality certification.

### **1.7.2 ENDANGERED SPECIES ACT-SECTION 7 COORDINATION**

In accordance with Section 7 of the Endangered Species Act, consultation with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service regarding the project has been completed (see Appendix A).

## **1.8 METHODOLOGY**

An interdisciplinary team used a systematic approach to analyze the affected area, to estimate the probable environmental effects, and to prepare the Environmental Assessment. This included a literature search, coordination with agencies having expertise in certain areas, and on-site field investigations.

# **2 ALTERNATIVES**

## **2.1 INTRODUCTION**

The Alternatives Section is perhaps the most important component of this Environmental Assessment. It describes the no-action alternative, the proposed dredging alternative, as well as the dredged material placement and management options. The beneficial and adverse environmental effects of the alternatives are presented in comparative form, providing a clear basis for choice to the decisionmaker and the public. A preferred alternative was selected based on the information and analysis presented in the sections on the Affected Environment and Probable Impacts.

## **2.2 DESCRIPTION OF ALTERNATIVES**

### **2.2.1 NO-ACTION ALTERNATIVE**

The IWW in the vicinity of Ponce de Leon Inlet, cuts V-22 through V-40, would not be dredged. This would result in increased shoaling and unsafe navigation conditions.

### 2.2.2 DREDGING ALTERNATIVE

The proposed maintenance dredging of the IWW in the vicinity of Ponce de Leon Inlet, cuts V-22 through V-40, would occur as planned. In addition to the dredging of the IWW, two new settling basins would be constructed at cuts V-23 and V-26 (see Figures 2 and 3). A third settling basin at cut V-24 is believed to be a pre-existing project feature and would also be dredged (see Figure 4). The basins have been located in areas that exhibit a high propensity for shoaling and their presence should reduce the need for future maintenance dredging as well as reduce hazards to navigation. Sand would be removed from all of these basins to the authorized depth of -12' m.l.l.w. Any rock encountered would be left in place.

#### 2.2.2.1 Nearshore Placement

An estimated 800,000 cubic yards of dredged material would be placed in the nearshore area from the upper reach of the project channel (Cuts V-22 to V-35). Equipment would be used that would diffuse the material evenly in a cross-sectional distribution throughout the nearshore area (see Figure 5). The cross-sectional area should match the existing nearshore contours, as close as possible, without any material being placed above -12' m.l.l.w. Transportation of dredged material to the nearshore area would be by pipeline routed along the project channel, crossing over to the beach via Sapphire Road, and then out into the nearshore area (refer to Figure 5).

#### 2.2.2.2 Upland Placement

Approximately 300,000 cubic yards of dredged material from the lower reach of the project channel (Cuts V-36 to V-40) would be placed in DMMA V-26 located in the City of Edgewater. The pipeline route from the IWW to V-26 would be the South Canal (see Figure 6).

#### 2.2.2.3 Dune Construction

Shore protection dunes may be constructed primarily from Sapphire Road south to 27<sup>th</sup> Avenue at New Smyrna Beach, a distance of 3 miles. An estimated 200,000 cubic yards of beach quality dredged material, with less than 10% fines, could be used for this purpose. The material may be piped onto the beach using the route described for the nearshore area and then trucked to specific locations where dunes may be built. Construction may be accomplished on a case-by-case basis through coordination between property owners and FIND.

### 2.3 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

The Corps and FIND originally proposed that all of the dredged material from the project channel be placed on New Smyrna Beach from Sapphire Road south to 27<sup>th</sup> Avenue. However, this alternative has been eliminated due to local public opposition. Also, the placement of dredged material at Bethune Beach has also been eliminated due to the high cost of transporting dredged material to this location.



## **2.4 PREFERRED ALTERNATIVE**

The preferred alternative is to perform the proposed maintenance dredging of the IWW, cuts V-22 through V-40, in order to maintain the navigable capacity of the channel. All of the placement area alternatives are considered environmentally acceptable.

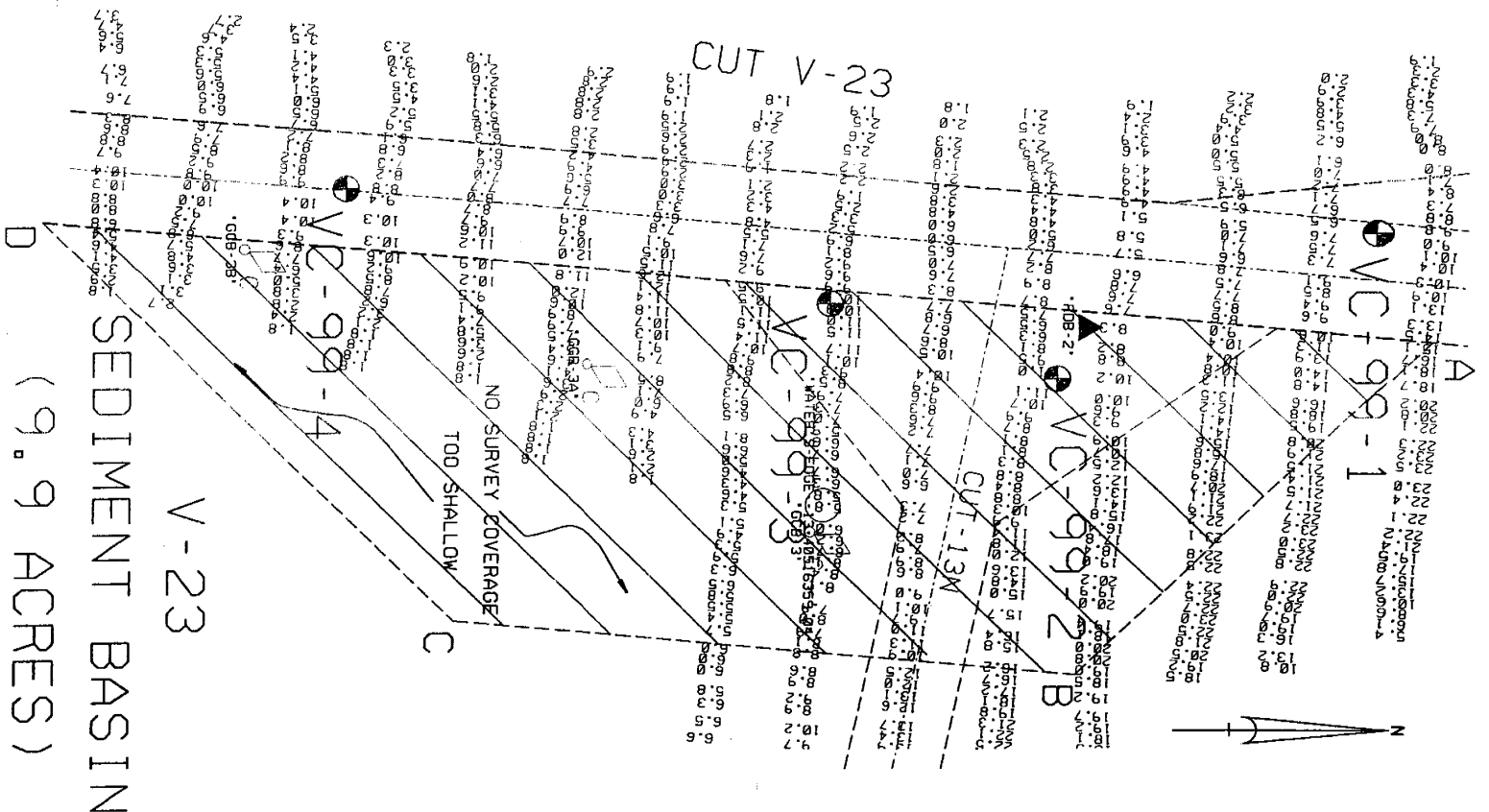
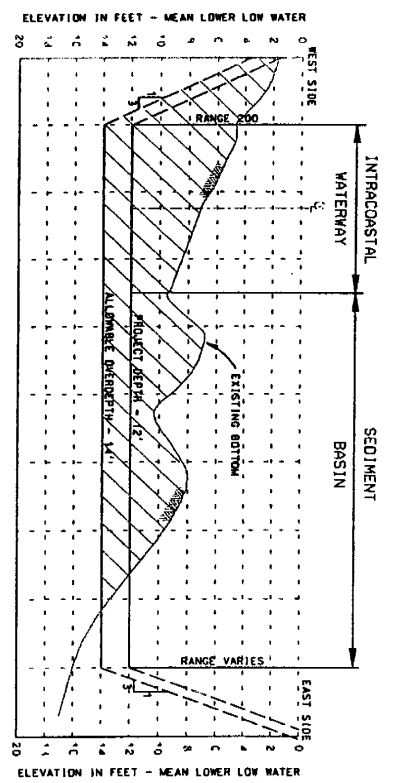


Figure 2



TYPICAL CROSS SECTION FOR CUT V-23 AND SEDIMENT BASIN

V-23 SEDIMENT BASIN

SETTLING BASIN

BOUNDARY	X	Y
A	516,181	1,730,738
B	516,548	1,730,370
C	516,486	1,729,700
D	516,044	1,729,257

CORE BORINGS

SAMPLE	X	Y
99-1	516,062	1,730,682
99-2	516,220	1,730,348
99-3	516,137	1,730,106
99-4	516,009	1,729,581

NAD 27, FL EAST



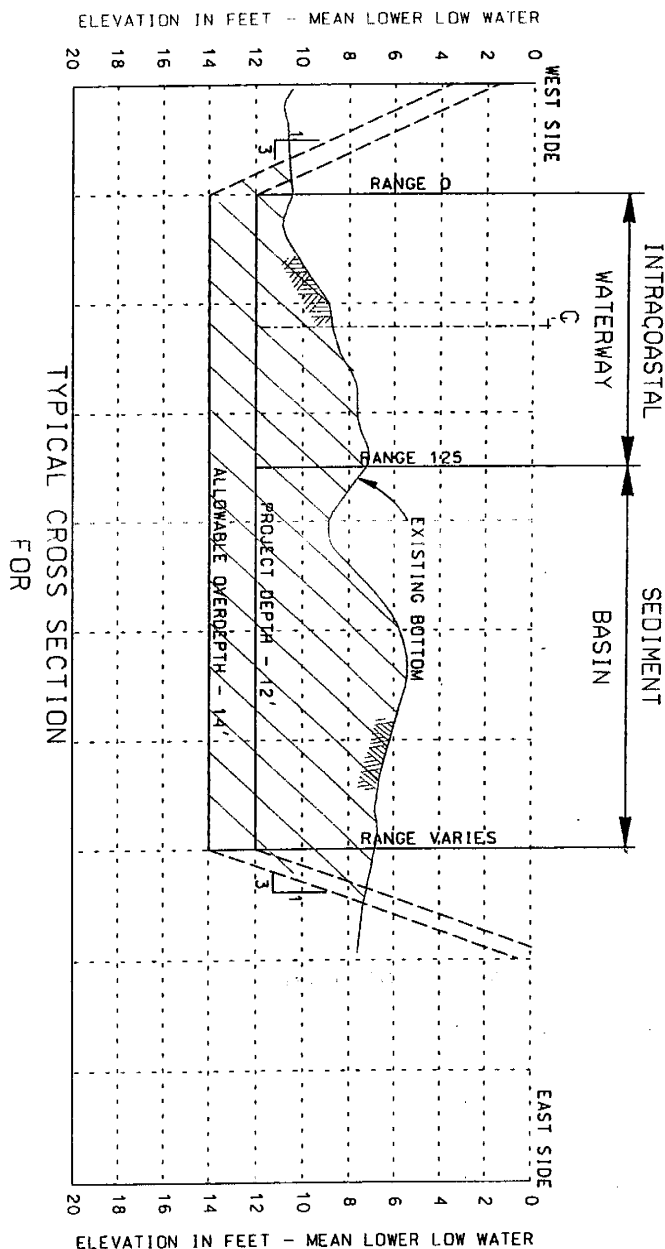
DRAWINGS TO ACCOMPANY THE APPLICATION FOR WATER QUALITY CERTIFICATE SUBMITTED TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICANT: U.S. ARMY CORPS OF ENGINEERS  
 PROJECT: MAINTENANCE DREDGING, 12-FOOT PROJECT INTRACOASTAL WATERWAY, VOLUSIA COUNTY  
 DATE: REV. FEB 2003 SHEET 8 OF 14

Figure 3

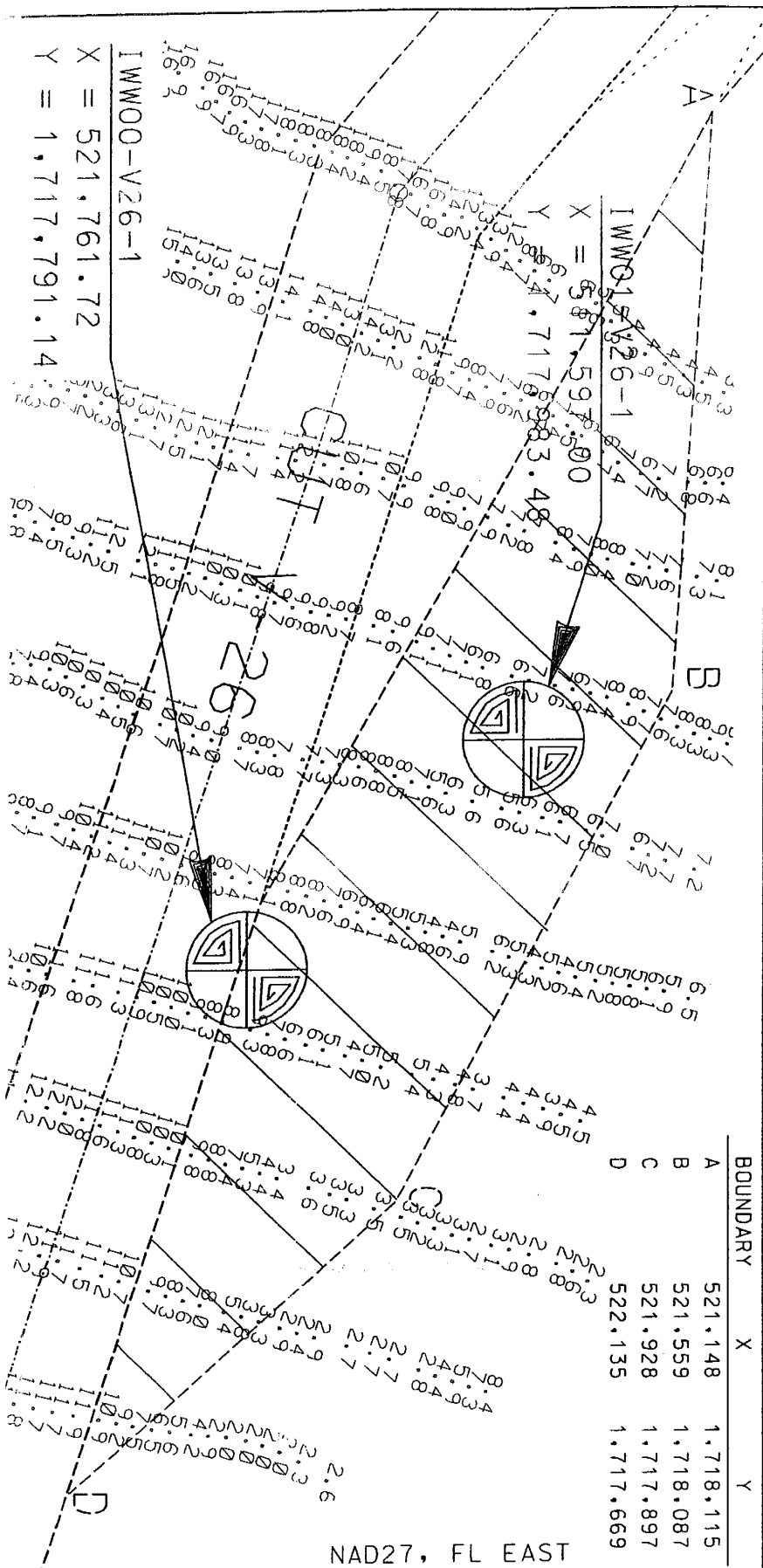
# CUT V-26 SEDIMENT BASIN

(2.95 ACRES)



TYPICAL CROSS SECTION FOR CUT V-26 AND SEDIMENT BASIN

SEDIMENT BASIN - SOUTH



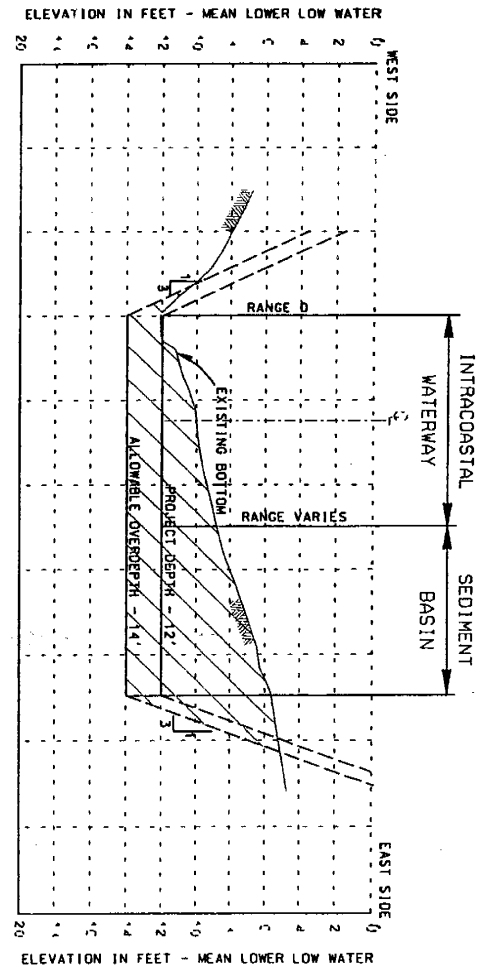
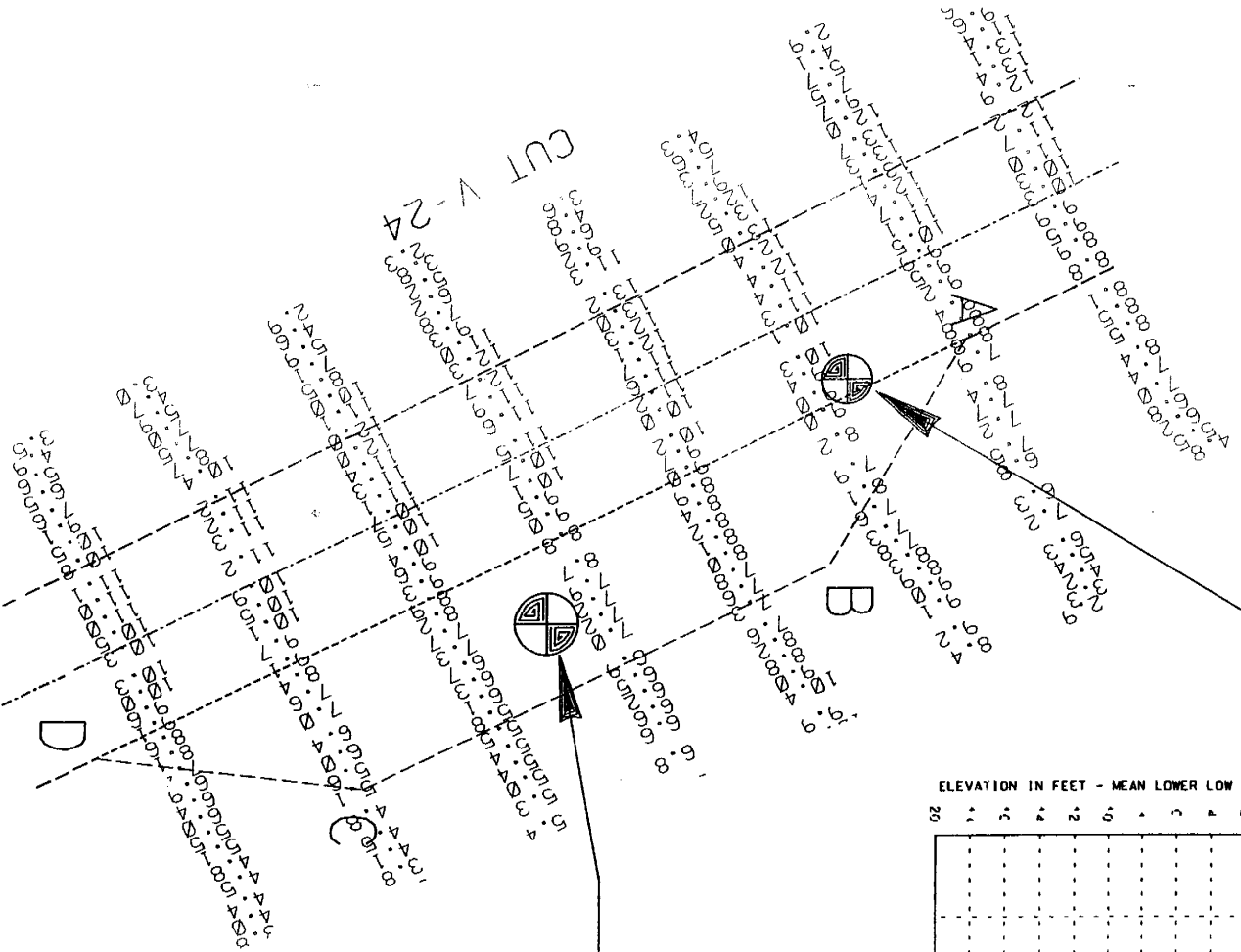
DRAWINGS TO ACCOMPANY THE APPLICATION FOR WATER QUALITY CERTIFICATE SUBMITTED TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICANT: U.S. ARMY CORPS OF ENGINEERS  
PROJECT: MAINTENANCE DREDGING, 12-FOOT PROJECT  
INTRACOASTAL WATERWAY, VOLUSIA COUNTY

DATE: REV. FEB 2003 SHEET 10 OF 14



IWW01-V24-4  
 X = 517,463.74  
 Y = 1,725,021.22



TYPICAL CROSS SECTION  
 FOR  
 CUT V-24 AND SEDIMENT BASIN

IWW00-V24-2  
 X = 517,632.77  
 Y = 1,724,816.30

CUT V-24  
 SEDIMENT BASIN  
 (1.15 ACRES)

BOUNDARY	X	Y
A	517,437	1,725,098
B	517,592	1,725,008
C	517,747	1,724,693
D	517,724	1,724,516

NAD 27, FL EAST

V-24 SEDIMENT BASIN

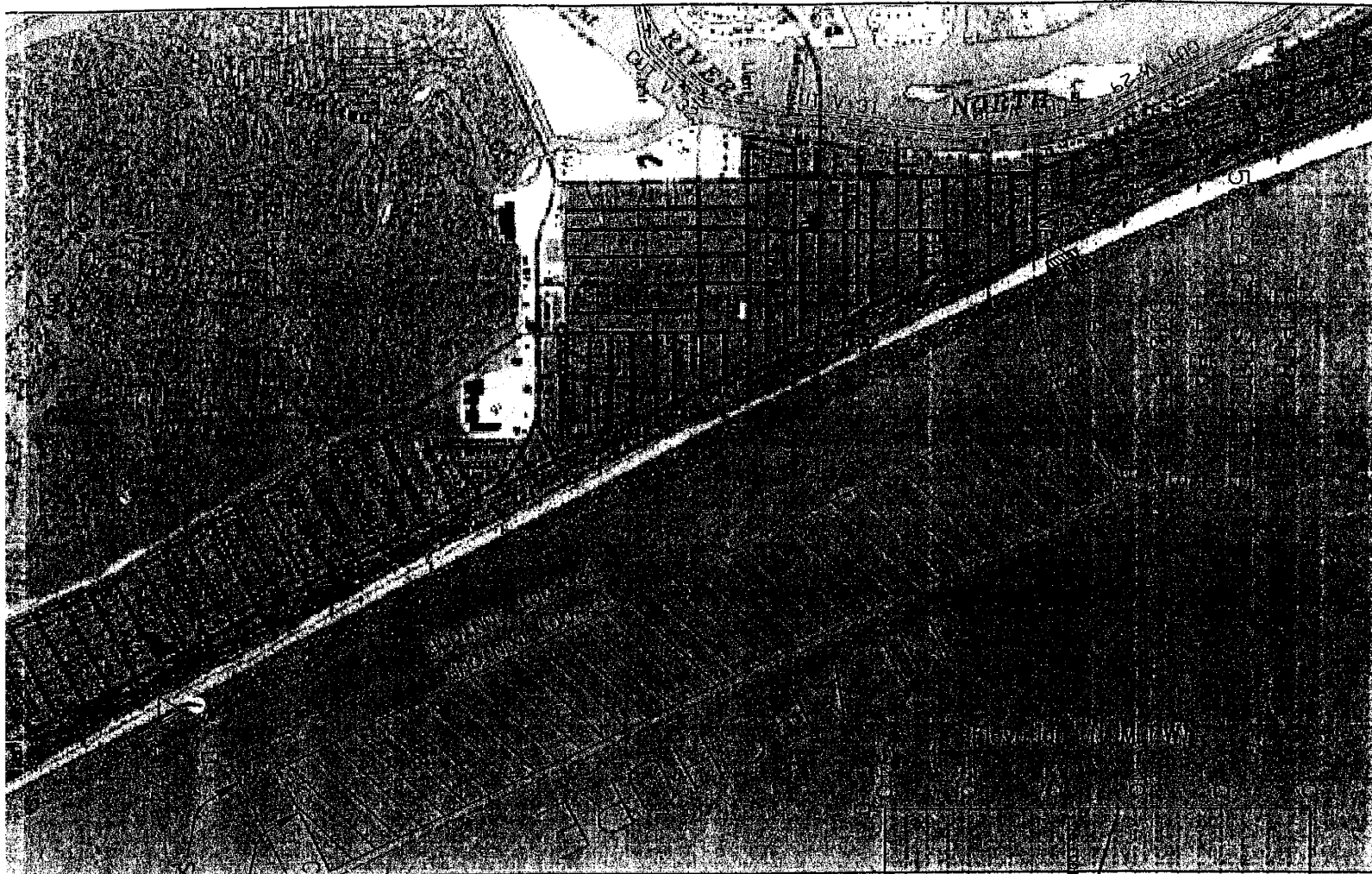
DRAWINGS TO ACCOMPANY THE  
 APPLICATION FOR WATER QUALITY  
 CERTIFICATE SUBMITTED TO THE  
 FLORIDA DEPARTMENT OF  
 ENVIRONMENTAL PROTECTION

APPLICANT: U.S. ARMY CORPS OF ENGINEERS

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 INTRACOASTAL WATERWAY, VOLUSIA COUNTY

DATE: REV. FEB 2003 SHEET 9 OF 14





# TYPICAL NEARSHORE CROSS-SECTION

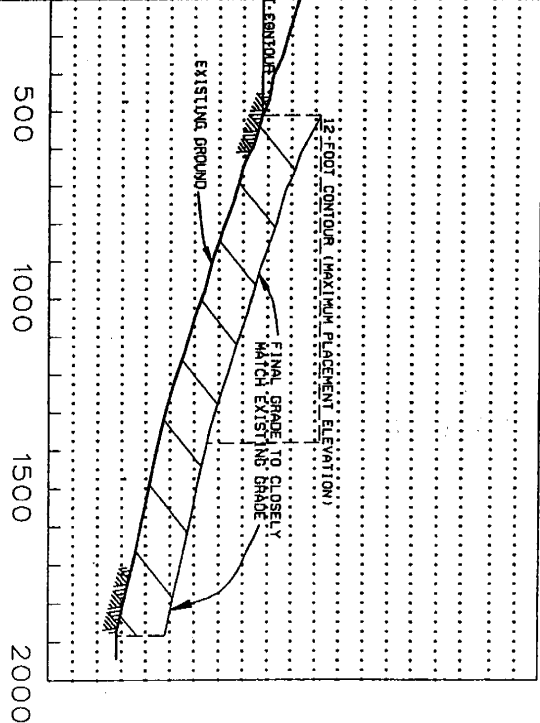


Figure 5

NEARSHORE PLACEMENT AREA

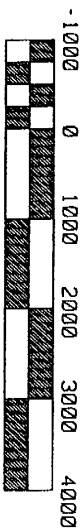
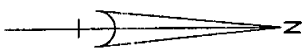
NEARSHORE SITE BOUNDARY			
PT	EASTING	NORTHING	
A	533,060	1,713,465	
B	534,851	1,714,363	
C	540,225	1,703,623	
D	538,436	1,702,731	

WORKING SITE BOUNDARY			
PT	EASTING	NORTHING	
A'	533,641	1,713,196	
B'	534,983	1,713,868	
C'	539,911	1,740,025	
D'	538,569	1,703,356	

WORKING BOUNDARY (380 ACRES)

SITE BOUNDARY (552 ACRES)



SCALE IN FEET

DRAWINGS TO ACCOMPANY THE  
APPLICATION FOR WATER QUALITY  
CERTIFICATE SUBMITTED TO THE  
FLORIDA DEPARTMENT OF  
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APPLICANT: U.S. ARMY CORPS OF ENGINEERS

PROJECT: MAINTENANCE DREDGING, 12-FOOT PROJECT  
INTRACOASTAL WATERWAY, VOLUSIA COUNTY

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**Figure 6**

V26 CONTAINMENT AREA AND SOUTH CANAL



DRAWINGS TO ACCOMPANY THE  
APPLICATION FOR WATER QUALITY  
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APPLICANT: U.S. ARMY CORPS OF ENGINEERS

PROJECT: MAINTENANCE DREDGING, 12-FOOT PROJECT  
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## **2.5 COMPARISON OF ALTERNATIVES**

Table 1 lists alternatives considered and summarizes the major features and consequences of the proposed action and alternatives. See Section 4.0, Environmental Effects, for a more detailed discussion of impacts of alternatives.

Table 1. Summary of Direct and Indirect Impacts.

ALTERNATIVE ENVIRONMENTAL FACTOR	NO-ACTION ALTERNATIVE	DREDGING WITH NEARSHORE PLACEMENT	DREDGING WITH UPLAND PLACEMENT	DREDGING WITH DUNE CONSTRUCTION
SOCIO-ECONOMICS	Major long-term adverse effect to commercial shipping and recreational boating interests. Possible adverse impact to property owners if beaches continue to erode and shore protection dunes are not constructed.	Major long-term benefit to commercial shipping and recreational boating interests. Migration of material to beach should help protect property from erosion. Pipeline placement along Sapphire Road would disrupt residents.	Major long-term benefit to commercial shipping and recreational boating interests.	Major long-term benefit to commercial shipping and recreational boating interests. Property owners would benefit from additional flood protection because of dune construction. Pipeline installation along Sapphire Road would temporarily disrupt residents.
NAVIGATION	Major long-term reduction in navigable capacity of channel and increased safety risks.	Major long-term benefit from maintaining the channel. Short-term adverse impact caused by construction vessel congestion.	Major long-term benefit from maintaining the channel. Short-term adverse impact caused by construction vessel congestion.	Major long-term benefit from maintaining the channel. Short-term adverse impact caused by construction vessel congestion.
RECREATION	Adverse effect to recreational boating. Possible minor reduction in available beach for recreational purposes.	Long-term benefit to recreational boating. Increase in available beach for recreation over time.	Long-term benefit to recreational boating. Possible reduction in available beach for recreational purposes.	Long-term benefit to recreational boating.
SHORELINE STABILIZATION	No effect along channel shoreline anticipated. Probable continued erosion of beach shoreline.	No effect along channel shoreline anticipated. Rate of beach erosion should decline.	No effect along channel shoreline anticipated. Probable continued erosion of beach shoreline.	No effect along channel shoreline anticipated. Rate of beach erosion should decline.
WATER QUALITY DEGRADATION	Larger vessels would continue to create turbid conditions caused by prop dredging and possible discharges with groundings.	Short-term localized increase in turbidity at the dredge site and the nearshore disposal area.	Short-term localized increase in turbidity at the dredge site.	Short-term localized increase in turbidity at the dredge site.
SEA TURTLES	Possible minor reduction of nesting habitat on the beach.	Unlikely to have adverse effects. Increase in nesting area over time.	No effect.	May affect nesting. Possible increase in nesting habitat on the beach.
MANATEES	No effect.	Minimal effect with implementation of standard protection measures.	Minimal effect with implementation of standard protection measures.	Minimal effect with implementation of standard protection measures.
PIPING PLOVER	No effect.	Unlikely to have adverse effects.	No effect.	Unlikely to have adverse effects.
RIGHT WHALE	No effect.	Unlikely to have adverse effects.	No effect.	No effect.
ATLANTIC SALT MARSH SNAKE	No effect.	No effect.	Unlikely to have adverse effects.	No effect.
MIGRATORY BIRDS	No effect.	Unlikely to have adverse effects.	Unlikely to have adverse effects.	Unlikely to have adverse effects.



ALTERNATIVE ENVIRONMENTAL FACTOR	NO-ACTION ALTERNATIVE	DREDGING WITH NEARSHORE PLACEMENT	DREDGING WITH UPLAND PLACEMENT	DREDGING WITH DUNE CONSTRUCTION
VEGETATION	No effect.	Pipeline route may have minor impact on vegetation east of Sapphire Road. No adverse effects to seagrass are anticipated.	Pipeline route along South Canal should not impact mangroves. No adverse effects to seagrass are anticipated.	Pipeline route would have minor impact on vegetation east of Sapphire Road. No adverse effects to seagrass are anticipated.
WETLANDS AND MUDFLATS	No effect.	No adverse effects are anticipated.	No adverse effects are anticipated.	No adverse effects are anticipated.
ESSENTIAL FISH HABITAT	No effect.	No significant adverse effects are anticipated.	No significant adverse effects are anticipated.	No significant adverse effects are anticipated.
BENTHOS	No effect.	Minor short-term adverse effects at the dredge site and the nearshore area.	Minor short-term adverse effects at the dredge site.	Minor short-term adverse effects at the dredge site and the dune area.
CULTURAL RESOURCES	Minimal effect from ongoing erosion.	Potential to affect Old Stone Wharf from dredging operations. No effect to historic resources from nearshore placement.	Potential to affect Old Stone Wharf from dredging operations. No adverse affect to South Canal from pipeline use. Potential affect to historic resources during construction.	Potential to affect Old Stone Wharf from dredging operations. No effect from dune construction.
AESTHETICS	No effect.	Minor short-term adverse effects due to construction activities.	Minor short-term adverse effects due to construction activities.	Minor short-term adverse effects due to construction activities.
NOISE	No effect.	Noise from pipeline construction and boosters may disrupt residents along Sapphire Road.	Minor disturbance is anticipated.	Noise from pipeline construction and boosters may disrupt residents along Sapphire Road.

### **3 AFFECTED ENVIRONMENT**

#### **3.1 INTRODUCTION**

The Affected Environment Section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that would affect or that would be affected by the alternatives if they were implemented, not the entire existing environment. This section and the description of the "no-action" alternative provides the basic information for determining the environmental impacts of the proposed action and reasonable alternatives.

#### **3.2 GENERAL ENVIRONMENTAL SETTING**

##### **3.2.1 AREA TO BE DREDGED**

The section of the IWW to be dredged is located near the community of New Smyrna Beach in Volusia County, Florida. The northern section of the project channel, cuts V-22 through V-24, lies within the Halifax River and the Ponce de Leon Cut whereas the remaining section, cuts V-25 through V-40, is located within the Indian River. Both of these river systems converge at Ponce de Leon Inlet. Dredging would begin near the mouth of Mill Creek (cut V-22) and continue south to the vicinity of Three Sisters Island (cut V-40) for a total distance of 14.2 miles. A significant portion of the shoreline along the project channel has been developed for single-family residential, high-density residential, and commercial uses.

##### **3.2.2 NEARSHORE PLACEMENT AREA**

The nearshore placement area is located in open water south of Ponce de Leon Inlet and between Florida Department of Environmental Protection (DEP) monuments R-160 and R-173. This site was established in order to accommodate material resulting from the maintenance dredging of Ponce de Leon Inlet. The Corps and FIND, in coordination with DEP, have expanded the capacity of this area so that additional material resulting from the maintenance dredging of the IWW can also be placed at this location. The approximate dimensions of the new area would be 12,000-feet by 2,000-feet, 551 acres, and situated 3,250 feet south of Ponce de Leon Inlet. Placement of dredged material would be between the -12' and -32' contours (m.l.l.w.). Surveys of the expanded nearshore placement area using side-scan technology indicate the bottom is comprised of soft sediments such as sand and silt. The pipeline route to the nearshore placement area would follow the IWW channel, cross overland along Sapphire Road, cross a strip of land adjacent to Bark Park, out onto the beach and into the water (see photographs in Appendix D).

### **3.2.3 UPLAND MANAGEMENT SITES**

Dredged Material Management Area V-26 was recently built and is located within an industrial park of Edgewater. It is 106.8 acres in size with an impacted zone of 58 acres and a buffer zone of 48.8 acres. The pipeline route to V-26 would follow the IWW, proceed west through South Canal, and enter V-26 on the north-east side of the facility (see Figure 6 and photographs in Appendix D).

### **3.2.4 DUNE CONSTRUCTION SITE**

Beach quality dredged material may be piped onto the beach using the route described for the nearshore placement area. The material may be temporarily stored on the beach within a 300-foot area along Bark Park and outside the designated (Habitat) Conservation Zone (CZ) (see photographs in Appendix D). Dunes may be constructed using this material, only at the request of private property owners, within critically eroded sections of the upper beach of the CZ from Smyrna Beach Park south to 27<sup>th</sup> Ave. In reality, this alternative consists of placing sand at the predetermined locations and allowing natural factors, primarily the wind, to actually create the dunes. Vehicles are allowed on the beach within this area, but not in the 30-foot wide CZ. The creation of the CZ was stipulated as a condition of an incidental take permit for nesting sea turtles and issued to Volusia County pursuant to Section 10(a) (1)(B) of the U.S. Endangered Species Act of 1973. The permit was required to ameliorate for human activities, specifically vehicular use of the beach, that result in the incidental taking of listed species (Volusia County Beach Habitat Conservation Plan 1996). For the most part, this stretch of beach has a relatively flat profile and is comprised primarily of coarse and fine sand as well as shell. The upper beach zone has been significantly modified in places by construction activities, such as the installation of sea walls. Land use just west of the upper beach consists of commercial and residential developments.

## **3.3 SOCIO-ECONOMICS**

Recreational boating and commercial shipping interests within the IWW continues to provide a stimulus for local and regional economies. The beaches in this area also significantly affect the local economy by attracting many residents as well as thousands of tourists each year. Many people within the community of New Smyrna Beach consider vehicular access to their beach areas as critical to maintaining the local economy. Republic Parking, a contractor employed by Volusia County, reported the following traffic summary for accessing the beaches just south of Ponce de Leon Inlet via the Ponce Inlet and Smyrna Dunes ramps:

Table 2. Year 2000-Number of Cars Accessing Beaches South of Ponce de Leon Inlet.

MONTH RAMP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PONCE INLET	5664	5316	5555	5574	7463	7214	7490	6033	5411	5299	4365	3288
SMYRNA DUNES	4844	6632	8271	6914	6218	6366	6937	6411	4994	5581	4798	3327
TOTAL	10508	12148	13826	12488	13681	13580	14427	12444	10405	10880	9163	6615

Table 3. Year 2001-Number of Cars Accessing Beaches South of Ponce de Leon Inlet.

MONTH RAMP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PONCE INLET	4040	5135	5362	6211	6333	5666						
SMYRNA DUNES	4568	5542	6304	7491	6883	5776						
TOTAL	8608	10677	11666	13702	13216	11442						

The county generates revenue by charging a beach access fee at each of the ramps. Commercial vendors located on the beach, who must purchase operating permits, also depend on this vehicular traffic for sale or rental of their merchandise. Additionally, the local community most certainly generates significant revenue through the sale of goods and services to the large numbers of visiting tourists.

### 3.4 NAVIGATION

In 1998, a total of 694,000 short tons of commercial freight were transported between Jacksonville and Miami via the IWW. Commodities included petroleum products, food and farm products, crude materials, and manufactured goods (Waterborne Commerce of the United States 1998).

### 3.5 RECREATION

Although statistical information is currently not available, observations made by the local community as well as by Corps staff indicate that the IWW in the vicinity of New Smyrna Beach is heavily used by recreational boat traffic. Many people also recreate on the area beaches as shown by the numbers of vehicles accessing these locations. Activities include sun bathing, surfing, beach combing, walking, and surf fishing.

### 3.6 SHORELINE STABILITY

Corps staff recently inspected the project channel and observed that the shoreline appears to be relatively stable. The state of Florida's Office of Beaches and Coastal Systems has designated the shoreline just south of Ponce de Leon Inlet and adjacent to New Smyrna Beach as "critically eroded."

### **3.7 WATER QUALITY**

#### **3.7.1 WATER USE CLASSIFICATION**

Portions of the project channel lie adjacent to Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters, both are designated as Outstanding Florida Waters. Outside these areas, waters within the proposed dredging area have been designated by the state of Florida as Class II and III quality suitable for recreation.

#### **3.7.2 SEDIMENT ANALYSIS**

During calendar years 1997, 1999, and 2000, the Corps sampled the bottom substrate at numerous stations within the project channel using a vibracore tube. Examination of the sediment indicated that the composition is comprised primarily of fine sand. Using a 200-micron sieve, all of the samples were found to contain less than 10% silt or fines making the substrate suitable for beach or nearshore placement. The Corps also analyzed sediment samples from the bottom of the project channel near Chicken Island for heavy metals (arsenic, cadmium, chromium, lead, nickel, mercury, silver, and barium) as well as fecal coliform bacteria (see Appendix C; Analytical Case Narrative). Fecal coliform bacteria and heavy metal concentration levels did not exceed the expected naturally occurring levels for these substances (Brady 1974; MacDonald 1993; US Army Corps of Engineers 1995).

### **3.8 THREATENED AND ENDANGERED SPECIES**

#### **3.8.1 SEA TURTLES**

The loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp's Ridley (*Lepidochelys kempii*) sea turtles can occur within the proposed project area (USFWS 1996). All of these species are federally "Endangered" except for the loggerhead, which is classified as "Threatened." The average number of sea turtle nests recorded from 1988 to 1994 on Volusia County beaches, excluding North Peninsula State Recreation Area and the Canaveral National Seashore, were as follows: loggerhead = 80.86/year, green = 2.0/year, and leatherback = 0.71/year. In 1996, two Kemp's ridley nests were documented on county beaches whereas hawksbill nests have not as yet been recorded in this area (County of Volusia 1996). According to the Florida Marine Research Institute, the earliest recorded sea turtle nesting for Volusia County was April 17 (loggerhead) and the latest recording nesting was September 28 (green). Dodd (1992) reported that the incubation period for loggerheads ranges between 50 to 75 days depending on nest temperature. As stated previously, a (habitat) Conservation Zone was established along selected areas of Volusia County beaches in order to protect federally endangered and threatened species, especially sea turtles (Volusia County Environmental Management Services 1996).

### 3.8.2 MANATEES

The federally "Endangered" West Indian manatee (*Trichechus manatus*) uses the IWW near New Smyrna Beach as a travel corridor. Newborn calves have also been observed within the project channel (Milio, USFWS, 2001, personal communication). From 1974 through June 2001, a total of 185 manatee mortalities have been recorded in Volusia County with 54 of these being caused by collisions with watercraft (Florida Marine Research Institute 2001).

### 3.8.3 PIPING PLOVER

Critical habitat for the federally "Threatened" piping plover (*Charadrius melodus*) has been designated along the northern and southern land areas adjacent to Ponce de Leon Inlet (USFWS 2001). This species is known to utilize this area during the winter months.

### 3.8.4 NORTHERN RIGHT WHALE

Right whales (*Eubalaena glacialis*) can occur within nearshore waters in the vicinity of Ponce de Leon Inlet during the months of December through March. This area lies within the federally designated critical habitat for this highly "Endangered" species (National Marine Fisheries Service 1995).

### 3.8.5 ATLANTIC SALT MARSH SNAKE

The federally "Threatened" Atlantic salt marsh snake (*Nerodia clarkii taeniata*) ranges throughout the coastal areas of Volusia County. It inhabits coastal salt marshes and mangrove swamps and has been observed along tidal creeks, ditches, and pools in association with glassworts (*Salicornia*) and black mangrove (*Avicennia germinans*) (Kochman 1992). A mangrove community was observed along a portion of South Canal (see photographs in Appendix D).

## 3.9 MIGRATORY BIRDS

A bird rookery is known to exist on an island within the project channel immediately opposite Sapphire Road. On a recent inspection of the rookery, Corps personnel observed in excess of 250 brown pelican (*Pelecanus occidentalis*) nests as well as great egrets (*Casmerodius albus*) and white ibises (*Eudocimus albus*). The brown pelican's nesting season in Florida can begin in December and continue throughout the summer (Nesbitt 1996). Certain coastal species, in particular Wilson's plover (*Charadrius wilsonia*), may utilize the upper beach for nesting. According to Kale et al. 1990, Wilson's plover initiates egg-laying in April and may continue nesting through July in Florida.

### 3.10 VEGETATION

#### 3.10.1.1 Mangroves

As previously mentioned, a mangrove community (*Avicennia germinans*, *Laguncularia racemosa*, and *Rhizophora mangle*) was observed at the mouth of South Canal, the proposed pipeline route to V-26 (see photographs in Appendix D). Black mangroves (*Avicennia germinans*) were also observed along the canal banks proceeding westwards from the mouth to the first railroad crossing, a distance of approximately 0.4 miles. Other mangrove communities occur in the vicinity of the project.

#### 3.10.1.2 Sea Oats

Vegetation just east of Sapphire road and within the proposed pipeline corridor to the nearshore area consists primarily of sea oats (*Uniola paniculata*) (see photographs in Appendix D).

#### 3.10.1.3 Seagrass

There are unconfirmed reports of isolated patches of *Halodule wrightii* and/or *Ruppia maritima* being observed immediately north of Ponce De Leon Inlet in what is considered the Halifax River estuary (Virnstein, SJRWMD, 2003, personal communication). However, the Corps believes that seagrasses do not occur within the project channel due to high levels of background turbidity that results in poor light penetration beyond 4.5 feet. This determination was based on multiple site visits by Corps biologists as well as coordination with seagrass researchers with the St. Johns River Water Management District. While it may be possible to find patches of seagrass in shallow water near the project channel, the likelihood of this happening is not great since this part of Volusia County is at the northern fringe of the seagrasses normal range of distribution (Virnstein et al. 1996).

### 3.11 WETLANDS AND MUDFLATS

Salt marsh, dominated by cord grass (*Spartina alterniflora*) and needle rush (*Juncus roemerianus*), commonly occurs along tidal tributaries of the Halifax and Indian Rivers. Mudflats fringe the IWW and tributary creeks during times of low tide.

### 3.12 ESSENTIAL FISH HABITAT

Managed species within the project area of specific interest include juvenile penaeid shrimp (*Penaeus sp.*), red drum (*Sciaenops ocellatus*), snappers (family Lutjanidae), as well as other species. Ponce de Leon Inlet and local salt marsh are considered Essential Fish Habitat of particular concern (South Atlantic Fishery Management Council 1998).

### **3.13 BENTHOS**

#### **3.13.1 AREA TO BE DREDGED**

Sub-tidal oysterbeds do not occur within the project channel (Berrigan, DOACS, 2001, personal communication). However, oysters can be found on pilings and other hard surfaces or in fringe beds along the edge of salt marsh. This section of the project channel is currently conditionally restricted or restricted to harvesting shellfish. Other macroinvertebrates commonly found in soft-bottom estuarine habitat in northern Florida include annelids, a variety of mollusks besides oysters, arthropods, sponges and polyps (Hoffman and Olsen 1982).

#### **3.13.2 BEACH PLACEMENT AREAS**

Upper beach zones in Florida typically support Talitrid amphipods, *Ocypode*, haustoriid amphipods and isopods. The swash zone may be inhabited by coquina clams (*Donax*), mole crabs (*Emerita talpoida*) and several polychaete species. A diverse community of haustoriid and other amphipod groups, *Donax*, *Tellina*, gastropods, polychaetes, burrowing callinassid shrimps, as well as a variety of fishes can be found in the shallow sublittoral zone (Spring 1981; Gorzelany 1983; Peters and Nelson 1987; Nelson and Collins 1987).

### **3.14 CULTURAL RESOURCES**

Large numbers of prehistoric and historic sites have been recorded in the project area. Dredging operations have the potential to impact the Old Stone Wharf Site (8VO4298). The proposed pipeline route to V-26 uses the South Canal (8VO7145). Both of these sites have been identified as potentially eligible for listing on the National Register of Historic Places (Austin et al. 1999). A local historian suggested that there might be a historic wharf at the mouth of the South Canal, this wharf would be associated with the Turnbull colony of the late 1700's. This hypothesized wharf is within the proposed pipeline route to the V-26 disposal area. A prehistoric site (8VO113) has been reported in the vicinity of V-26 and another has been reported in the vicinity of DMMA MSA-434C. The site near MSA-434C may have been destroyed early in the 20<sup>th</sup> century. Local informants have identified ongoing erosion at the Old Stone Wharf site from wakes of boats using the IWW. Dredging of the IWW may have an indirect effect of increasing boat traffic resulting in increased site damage caused by erosion.

### **3.15 AESTHETICS**

The IWW in the vicinity of New Smyrna Beach as well as the nearby beaches are enjoyed by many local residents and visitors year around. The area's appeal may be attributed in part to the picturesque waterways and beaches found there.



### **3.16 NOISE**

The neighborhoods along Sapphire Road and South Canal consist of quiet residential areas. South Canal also passes through some congested business areas.

## **4 ENVIRONMENTAL EFFECTS**

### **4.1 INTRODUCTION**

This section describes how the implementation of each alternative would affect the environmental resources listed in Section 1.4. A summary of these impacts can be found in Table 1 of Section 2.0. The following anticipated changes to the existing environment include direct, indirect, and cumulative effects.

### **4.2 SOCIO-ECONOMICS**

#### **4.2.1 NO-ACTION ALTERNATIVE**

There would be a major long-term adverse effect to commercial shipping and recreational boating interests that utilize the IWW if the navigable capacity of the channel was not maintained. Failure to construct dunes with dredged material on the local beaches could result in erosion of private and public property.

#### **4.2.2 DREDGING ALTERNATIVE**

Conversely, there would be a major long-term benefit to commercial shipping and recreational boating interests if the navigable capacity of the project channel were maintained. It is important to note that the maintenance of the IWW not only benefits commercial shipping and recreational boating interests but also benefits other nearby businesses that support these activities.

#### **4.2.3 MATERIAL PLACEMENT OPTIONS**

A primary benefit of possible dune construction via placement of dredged material would be the protection of private and public property from erosion. The placement of this material would be performed in such a manner as to not adversely affect driving on the beach. Migration of material from the nearshore area to the beach would also help protect property from flooding and erosion. The pipeline route to the nearshore area would temporarily disrupt the residents along Sapphire Road.

### **4.3 NAVIGATION**

#### **4.3.1 NO-ACTION ALTERNATIVE**

There would be a major long-term reduction in the navigable capacity of the IWW in the vicinity of New Smyrna Beach if the proposed project were not performed. Navigational safety may decline resulting in increased groundings and collisions.

The 7<sup>th</sup> District of the U.S. Coast Guard would continue to monitor channel conditions and issue advisories as necessary.

#### **4.3.2 DREDGING ALTERNATIVE**

Maintenance dredging would help maintain the navigable capacity of the project channel for commercial vessels. Dredged material placed in the nearshore area should not migrate back to the inlet since its location is in excess of 3250-feet to the south and the local current flows primarily southwards. Normal traffic on the IWW would temporarily be disrupted due to construction activities.

### **4.4 RECREATION**

#### **4.4.1 NO-ACTION ALTERNATIVE**

There would be an adverse effect to recreational boating if the project channel were not dredged. There could also be a possible reduction in available beach area for recreational purposes if the project channel were not dredged and the resulting material was not placed within the nearshore area.

#### **4.4.2 DREDGING ALTERNATIVE**

Maintenance dredging of the project channel would provide a long-term benefit to recreational boating. Recreational traffic on the IWW would be temporarily disrupted due to construction activities.

#### **4.4.3 MATERIAL PLACEMENT OPTIONS**

As stated earlier, dune construction activities would be performed in a manner that would not adversely affect driving on the beach. The temporary stockpile area and dune construction activities would affect a limited amount of recreational opportunities.

### **4.5 SHORELINE STABILITY**

#### **4.5.1 NO-ACTION ALTERNATIVE**

There would be no impact to shoreline stabilization along the project channel if the proposed maintenance dredging were not performed. The current rate of erosion observed at the local beaches could continue.

#### **4.5.2 DREDGING ALTERNATIVE**

Adverse impacts to the stability of the project channel's shoreline are not anticipated.

#### **4.5.3 MATERIAL PLACEMENT OPTIONS**

Studies performed on the nearshore area indicate that placement of dredged material within this location would facilitate the return of beach quality sediments

to the open coast littoral system (Taylor Engineering 2002). This should cause the rate of local beach erosion to decline.

## **4.6 WATER QUALITY**

### **4.6.1 NO-ACTION ALTERNATIVE**

Larger commercial vessels would probably continue to create turbid conditions by prop dredging through shoals within the project channel.

### **4.6.2 DREDGING ALTERNATIVE**

The primary anticipated change in water quality at the dredge site would be a temporary increase in turbidity. Due to a lack of silt in the bottom substrates, the Corps believes that a zero increase in turbidity above background levels at 25-meters from the suction head of the dredge is possible within areas adjacent to Outstanding Florida Waters. According to the state of Florida's water quality standards, outside areas of Outstanding Florida Waters, turbidity levels during dredging or placement of dredged material are not to exceed 29 nephelometric turbidity units (NTUs) above background levels at the edge of normally a 150-meter mixing zone. In order to comply with this standard, turbidity will be monitored according to state protocols during the proposed dredge work. If at any time the turbidity standard were exceeded, those activities causing the violation would cease.

### **4.6.3 MATERIAL PLACEMENT OPTIONS**

As with the dredging activity, the primary change in water quality during placement of dredged material in the nearshore area would be a temporary increase in turbidity. This activity as well as any discharge from the weirs at DMMA V-26 would be monitored similar to the dredging activity. Test wells have been installed in the vicinity of V-26 and shall be monitored, especially for salt water intrusion. Based on the analysis of sediment samples collected near Chicken Island, the placement of dredged material from the IWW on the beaches for dune construction near New Smyrna Beach would not present a human health hazard (Brady 1974; MacDonald 1993; US Army Corps of Engineers 1995).

## **4.7 THREATENED AND ENDANGERED SPECIES**

### **4.7.1 NO-ACTION ALTERNATIVE**

There could be a decrease in available sea turtle nesting habitat if the proposed dredging was not performed and the dredged material not placed in the nearshore area. Failure to construct the dunes may also result in a lost opportunity to create a limited amount of nesting habitat.

#### 4.7.2 DREDGING ALTERNATIVE

In accordance with Section 7 of the Endangered Species Act, coordination with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) has been completed (see Appendix C). The NMFS concurred with the Corps' determination that the proposed work is not likely to adversely affect any species under their purview. Also, the USFWS concurred with the Corps' determination that the work may affect nesting sea turtles and may affect, but is unlikely to adversely affect the Atlantic salt marsh snake. The USFWS further determined that the work may affect, but is unlikely to adversely affect the West Indian manatee and piping plover. Finally, the USFWS concluded that the proposed work is not likely to result in jeopardy to any of the species listed above. Critical habitat has not been designated in the project area; therefore, the project would not result in destruction or adverse modification of critical habitat.

#### 4.7.3 SEA TURTLES

Since a cutter suction pipeline dredge would most likely be used for this project, adverse impacts or "takings" of sea turtles within the proposed dredging area would not be anticipated. Dredged material to be used for dune construction would be stockpiled along a 300-foot section of beach adjacent to Bark Park. Dune construction would occur in the Conservation Zone, therefore, the dunes would be shaped with a seaward slope that will permit sea turtle access (refer to dune sketch in Appendix C). All dune construction work would be performed outside the sea turtle nesting season, December 1 through April 14. Members of the local community, including the Volusia County sea turtle monitor, are endorsing this construction because of the upper beach erosion that has occurred in this area. The new dunes could benefit sea turtles by restoring nesting habitat. Sea turtle monitoring regarding the temporary stockpile area and placement of material in the nearshore area would be performed in compliance with the Biological Opinion of the USFWS (see Appendix C).

#### 4.7.4 MANATEE

Standard protective measures would be taken during dredging and disposal activities to ensure the safety of manatees. To make the contractor and his personnel aware of the potential presence of this species in the project area, their endangered status, and the need for precautionary measures, the contract specifications would include the following standard manatee protection clauses. The contractor would instruct all personnel associated with construction activities about the potential presence of manatees in the area and the need to avoid collisions with them. If a manatee were sighted within 100 yards of the project area, all appropriate precautions would be implemented by the contractor to ensure protection of the manatee. These precautions would include the operation of all moving equipment no closer than 50 feet of a manatee. A cutter suction pipeline dredge would probably be used for this project. If a manatee were closer

than 50 feet to moving equipment or the project area, the equipment would be shut down and all construction activities would cease to ensure protection of the manatee. Construction activities would not resume until the manatee has departed the project area. All vessels associated with the project would operate at 'no wake' speeds at all times while in shallow waters or channels where the draft of the boat provides less than three feet clearance from the bottom. Mooring bumpers would be placed on all large vessels wherever and whenever there is a potential for manatees to be crushed between two moored vessels. The bumpers would provide a minimum stand-off distance of four feet. Boats used to transport personnel would be shallow draft vessels, preferably of the light-displacement category, where navigational safety permits. Vessels transporting personnel between the landing and any workboat would follow routes of deep water to the greatest possible extent. Shore crews or personnel assigned to the disposal site for the work shift would use upland road access if available. All personnel would be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Endangered Species Act and the Marine Mammal Protection Act. The contractor would be held responsible for any manatee harmed, harassed, or killed as a result of the construction of the project.

#### **4.7.5 PIPING PLOVER**

Dredging and material placement activities would not occur in the designated critical habitat utilized by the piping plover. Although it may be possible for piping plovers to occur in the project area, the USFWS believes that the work would not rise to the level of take given the birds mobility and availability of additional foraging and loafing habitat in the vicinity of Ponce de Leon Inlet.

#### **4.7.6 NORTHERN RIGHT WHALE**

The NMFS concurs with the Corps' determination that placement of dredged material within the nearshore area is unlikely to adversely affect the Northern right whale.

#### **4.7.7 ATLANTIC SALT MARSH SNAKE**

The pipeline route to DMMA V-26 would pass through potential habitat for this species along South Canal. USFWS and Corps biologists concur that activities associated with the pipeline installation are unlikely to adversely affect the Atlantic salt marsh snake.

### **4.8 MIGRATORY BIRDS**

#### **4.8.1 NO-ACTION ALTERNATIVE**

There would be no impact to migratory birds if the proposed maintenance dredging were not performed.

#### **4.8.2 DREDGING ALTERNATIVE**

Dredging activities are not expected to adversely affect the rookery located on the island in the IWW opposite Sapphire Road. However, as a precautionary measure, booster pumps associated with the pipeline to the nearshore area shall not be located closer than 1,000 feet to the rookery.

#### **4.8.3 MATERIAL PLACEMENT OPTIONS**

The Corps shall implement its migratory bird protection plan if work is performed in the designated temporary stockpile area on the beach, dune construction locations, or at DMMA V-26 during the nesting season, April 1 through August 31. No adverse impacts to migratory birds are anticipated with this plan in effect.

### **4.9 VEGETATION**

#### **4.9.1 NO-ACTION ALTERNATIVE**

There would be no impact to vegetation if the proposed maintenance dredging were not performed.

#### **4.9.2 DREDGING ALTERNATIVE**

Upland vegetation comprised primarily of sea oats would be avoided to the maximum extent practical during the installation of the pipeline to the nearshore area. Likewise, mangroves along South Canal would be avoided during installation of the pipeline to DMMA V-26. In the event of inadvertent impacts, the contractor would be required to replace damaged or destroyed sea oats or mangroves with the same species. Adverse impacts to seagrass within the project channel are not anticipated. Precautionary measures shall include a seagrass survey of the proposed widenings prior to performing work in these areas. Also, if seagrasses are observed within the 25-meter mixing zone of the dredge, dredging would cease immediately and the Contracting Officer notified immediately.

### **4.10 WETLANDS AND MUDFLATS**

#### **4.10.1 NO-ACTION ALTERNATIVE**

There would be no impact to wetlands and mudflats if the proposed maintenance dredging were not performed.

#### **4.10.2 DREDGING ALTERNATIVE**

Adverse impacts to wetlands and mudflats in the project area are not anticipated.

## **4.11 ESSENTIAL FISH HABITAT**

### **4.11.1 NO-ACTION ALTERNATIVE**

There would be no impact to Essential Fish Habitat (EFH) if the proposed maintenance dredging were not performed.

### **4.11.2 DREDGING ALTERNATIVE**

The proposed maintenance dredging and placement of dredged material in the nearshore area would impact approximately 236 and 551 acres respectively of estuarine/inshore substrata possibly utilized by various life stages of red drum, penaeid shrimp, snapper/grouper complex, and coastal migratory pelagic fishes. Because the project area has a soft bottom and is naturally dynamic, the Corps has determined that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries along the eastern coast of Florida. This determination has been fully coordinated with the NMFS.

## **4.12 BENTHOS**

### **4.12.1 NO-ACTION ALTERNATIVE**

There would be no impact to benthos if the proposed maintenance dredging were not performed.

### **4.12.2 DREDGING ALTERNATIVE**

Dredging the project channel would result in minor impacts to benthos. The bottom of the channel should be quickly re-colonized with organisms such as annelids and arthropods from adjacent similar habitats. As previously stated, sub-tidal oyster beds do not occur within the project footprint.

### **4.12.3 MATERIAL PLACEMENT OPTIONS**

Re-colonization of the nearshore area and upper beach by less mobile indigenous biota, i.e. haustoriids, should occur within months after placement of the dredged material (Charvat, Nelson, and Allenbaugh 1990).

## **4.13 CULTURAL RESOURCES**

### **4.13.1 NO-ACTION ALTERNATIVE**

There would be no new impacts to cultural resources eligible for listing on the National Register of Historic Places if the IWW was not dredged.

### **4.13.2 DREDGING ALTERNATIVE**

Dredging operations, specifically anchor placement and drag, has the potential to impact the Old Stone Wharf site (8VO4298). To avoid this impact an operation constraint creating an anchor exclusion zone will be included in the dredging plan.

Use of the South Canal (8VO7145) as a pipeline and return water route has the potential to affect the setting and condition of this historic resource. Mitigation measures including piping the return water to minimize the potential for erosion and pipeline placement controls would result in a temporary affect. A survey of the V-26 Dredged Material Management Area resulted in no cultural resources identified. This survey suggested that the reported prehistoric site (8VO113) in the vicinity of V-26 DMMA is probably outside of the project area. The pipeline in the vicinity of the hypnotized South Canal wharf will be floating and will be protected by an anchor exclusion zone. Consultation with the Florida State Historic Preservation Officer has been completed. In accordance with the National Historic Preservation Act and its implementing regulation, 36CFR800, a determination of no adverse effect to cultural resources has been made (May 2, 2003, Department of Historic Resources #2003-1562b; see Appendix C).

#### **4.14 AESTHETICS**

##### **4.14.1 NO-ACTION ALTERNATIVE**

There would be no impact to aesthetics if the proposed maintenance dredging were not performed.

##### **4.14.2 DREDGING ALTERNATIVE**

Construction activities within the project channel would temporarily impact the aesthetics of the area.

##### **4.14.3 MATERIAL PLACEMENT OPTIONS**

Dune construction activities at New Smyrna Beach and the pipelines to the nearshore area and V-26 would temporarily impact the aesthetics of each of these areas.

#### **4.15 NOISE**

##### **4.15.1 NO-ACTION ALTERNATIVE**

There would be no noise impact to local residents if the proposed maintenance dredging were not performed.

##### **4.15.2 DREDGING ALTERNATIVE**

Noise created by the placement of the pipeline along Sapphire Road may create a temporary disturbance to local residents. Work shall be under surveillance by the construction contractor and measures taken to avoid excessive noise.

#### **4.16 CUMULATIVE IMPACTS**

Cumulative impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and



reasonably foreseeable future actions (40 CFR 1508.7). As previously stated, maintenance of the IWW has provided a positive stimulus for adjacent local and regional economies resulting in growth and development. Conversely, growth and development is also the most significant factor affecting sensitive ecosystems. In Volusia County, where this particular project is located, a major increase in population growth occurred or is projected to occur between 1970 and 2015 as depicted in the following chart:

Census Year	Volusia County	Florida
1970	169,487	6,791,418
1980	258,762	9,791,418
1990	370,712	12,937,926
2000	443,343	15,982,378
2015	528,278	19,400,913

Source: Bureau of Economic and Business Research, Florida Population Studies, June 2000

#### **4.17 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

##### **4.17.1 IRREVERSIBLE**

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. There are no irreversible commitments of resources associated with the proposed project with the exception of federal funds to complete the work.

##### **4.17.2 IRRETRIEVABLE**

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. Dredging and construction activities would temporarily disrupt channel navigation as well as recreational activities.

#### **4.18 ENVIRONMENTAL COMMITMENTS**

The U.S. Army Corps of Engineers and contractors commit to avoiding, minimizing or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

1. All terms and conditions set out in the Biological Opinion of the USFWS and NMFS for those federally endangered or threatened species identified in this Environmental Assessment would be complied with. In addition to monitoring sea turtle nesting activity and implementing the standard manatee protection measures, the following additional protective actions would also be undertaken (see Sections 4.7.3 and 4.7.4):

- Dredged material may be used for dune construction and would be stockpiled along an area not to exceed 300-feet in length on the beach adjacent to Bark Park. This size limit would minimize disturbance to nesting sea turtles.

- Dune construction would occur in the Conservation Zone, therefore, the dunes would be shaped with a seaward slope that will permit sea turtle access (refer to dune sketch in Appendix C).

- All dune construction work would be performed outside the sea turtle nesting season, December 1 through April 14.

2. As a precautionary measure, booster pumps associated with the pipeline to the nearshore area shall not be placed within 1,000 feet of the rookery located on the island in the IWW opposite Sapphire Road (see Section 4.8.2). The District's standard migratory bird protection measures would be implemented for work within the temporary stockpile area adjacent to Bark Park, the dune construction locations, and DMMA V-26 (see Section 4.8.3).

3. Impact to mangrove areas caused by pipeline access and other construction activities shall be avoided. Mangrove areas that are inadvertently impacted by pipeline access or construction activities shall be restored to their pre-existing state including replacement of any mangroves that are damaged or destroyed. The contractor would be required to restore the vegetation in work areas, i.e. pipeline corridors (see Section 4.9.2).

4. Impact to dune vegetation caused by pipeline access and other construction activities shall be avoided. Dune areas that are inadvertently impacted by pipeline access or construction activities shall be restored to their pre-existing state including replacement of any dune vegetation that is damaged or destroyed (see Section 4.9.2).

5. Dredging would cease in the vicinity of seagrasses, if seagrasses are observed within the 25-meter mixing zone of the dredge. Also, the proposed wideners would be surveyed for seagrasses prior to performing any work in these areas by state of Florida and Corps biologists (see Section 4.9.2).

6. All project activities would be performed in compliance with the applicable terms and conditions of the water quality certification issued by the state of Florida. This includes maintaining a zero increase in turbidity above background levels at 25-meters from the suction head of the dredge within areas adjacent to Outstanding Florida Waters (see Section 4.6.2).

7. An anchor exclusion zone would be established during dredging in order to protect the Old Stone Wharf site from dredging impacts (see Section 4.13.2).

8. The South Canal would be protected from erosion by piping the discharge water from DMMA V-26 back to the IWW (see Section 4.13.2). Additionally, construction operations will be designed to avoid damage to the canal.

9. The contractor would establish and maintain quality control for environmental protection of all items set forth in the project plans and specifications. The contractor would record on daily quality control reports or attachments thereto, any problems in complying with laws, regulations and ordinances, and corrective action taken.

10. The contracting officer would notify the contractor in writing of any observed noncompliance with federal, state, or local laws or regulations, permits and other elements of the contractor's Environmental Protection Plan. The contractor would, after receipt of such notice, inform the contracting officer of proposed corrective action and take such action as may be approved. If the contractor fails to comply promptly, the contracting officer would issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions would be granted or costs or damages allowed to the contractor for any such suspension.

11. The contractor would train his personnel in all phases of environmental protection. The training would include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality control and supervisory personnel would be thoroughly trained in the proper use of monitoring devices and abatement equipment, and would be thoroughly knowledgeable of federal, state, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the contractor.

12. The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract would be protected during the entire period of this contract. The contractor would confine his activities to areas defined by the drawings and specifications.

13. As stated in the standard contract specifications, the disposal of hazardous or solid wastes would be in compliance with federal, state, and local laws. A spill prevention plan would also be required.

#### **4.19 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS**

There would be short-term degradation of water quality due to turbidity caused by dredging activities and the discharge of dredged material within the nearshore area. Benthic organisms and vegetation, along the pipeline routes, may be adversely impacted. This impact is expected to be minor and temporary.

#### **4.20 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS**

##### **4.20.1 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969**

Environmental information on the project has been compiled and this Environmental Assessment has been prepared. The project is in compliance with the National Environmental Policy Act.

##### **4.20.2 ENDANGERED SPECIES ACT OF 1973**

Consultation was initiated with the U.S. Fish and Wildlife Service on April 26, 2001, and completed on September 22, 2003 (see Appendix C). Consultation was also initiated with the National Marine Fisheries Service on March 18, 2003, and completed on April 23, 2003 (see Appendix C). The project is in full compliance with the Act.

##### **4.20.3 FISH AND WILDLIFE COORDINATION ACT OF 1958**

This project has been coordinated with the U.S. Fish and Wildlife Service. A Coordination Act Report, however, is not required for this project. This project is in full compliance with the Act.

##### **4.20.4 NATIONAL HISTORIC PRESERVATION ACT OF 1966 (as amended)**

Archival research and consultation with the State Historic Preservation Officer has been conducted in accordance with the implementing regulation (36CFR800). In a letter dated May 2, 2003, the SHPO concurred with the Corps' no adverse effect determination (see Appendix C). The project will not adversely affect historic properties included in or eligible for inclusion in the National Register of Historic Places. The project is in full compliance with the Act.

##### **4.20.5 CLEAN WATER ACT OF 1972**

Pursuant to this Act, a draft Section 401 Water Quality Certification has been obtained from the Florida Department of Environmental Protection. All applicable state water quality standards would be met. A Section 404(b) evaluation is

included in this report as Appendix A. A Public Notice has been issued in a manner that satisfies the requirements of Section 404 of the Clean Water Act.

#### 4.20.6 CLEAN AIR ACT OF 1972

No air quality permits would be required for this project.

#### 4.20.7 COASTAL ZONE MANAGEMENT ACT OF 1972

A Federal consistency determination in accordance with 15 CFR 930 Subpart C is included in this report as Appendix B. The Corps has determined that the project would have no unacceptable impacts and would be consistent with the Florida Coastal Management Plan. In accordance with the Memorandum of Understanding (1979) and the Addendum to the Memorandum (1983) concerning acquisition of Water Quality Certifications and other state authorizations, the Environmental Assessment and Section 404 (b)(1) Evaluation has been submitted to the state in lieu of a summary of environmental impacts to show consistency with the Florida Coastal Zone Management Plan. State consistency has been issued.

#### 4.20.8 FARMLAND PROTECTION POLICY ACT OF 1981

No prime or unique farmland would be impacted by implementation of this project. This Act is not applicable.

#### 4.20.9 WILD AND SCENIC RIVER ACT OF 1968

No designated Wild and Scenic River reaches would be affected by project related activities. This Act is not applicable.

#### 4.20.10 MARINE MAMMAL PROTECTION ACT OF 1972

Incorporation of the safe guards used to protect threatened or endangered species during dredging and placement operations would also protect any marine mammals in the area, therefore, this project is in compliance with the Act.

#### 4.20.11 ESTUARY PROTECTION ACT OF 1968

No designated estuary would be affected by project activities. This Act is not applicable.

#### 4.20.12 FEDERAL WATER PROJECT RECREATION ACT

There would be no recreational development as a result of this project. Therefore, this Act does not apply.

#### 4.20.13 FISHERY CONSERVATION AND MANAGEMENT ACT OF 1976

The project has been coordinated with the National Marine Fisheries Service (NMFS). The project is in full compliance with this Act.

#### 4.20.14 SUBMERGED LANDS ACT OF 1953

The project would occur on submerged lands of the state of Florida. The project has been coordinated with the state. The project is in full compliance with this Act.

#### 4.20.15 COASTAL BARRIER RESOURCES ACT AND COASTAL BARRIER IMPROVEMENT ACT OF 1990

Coastal barrier resource Unit PO8 is located within the project area. Maintenance dredging for navigation is considered a permissible action according to the Act (see U.S. Fish and Wildlife Service letter, Appendix C). The project is in full compliance with the Act.

#### 4.20.16 RIVERS AND HARBORS ACT OF 1899

The proposed work would not obstruct navigable waters of the United States. The planned action has been described in the Public Notice and other evaluations have been performed for activities subject to the Act. The project is in full compliance with the Act.

#### 4.20.17 ANADROMOUS FISH CONSERVATION ACT

Anadromous fish species would not be affected. The project has been coordinated with the National Marine Fisheries Service. The project is in full compliance with the Act.

#### 4.20.18 MIGRATORY BIRD TREATY ACT AND MIGRATORY BIRD CONSERVATION ACT

The District's migratory bird protection plan would be implemented. In addition, other protective measures shall be taken in regard to the rookery located on an island in the IWW opposite Sapphire Road. The project is in full compliance with the Act.

#### 4.20.19 MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT

Dredged material would not be taken to a Ocean Dredged Material Disposal Site nor would any "dumping" as defined in the Act (33 U.S.C. 1402)(f) in respect to this project be performed. Therefore, the Marine Protection, Research and Sanctuaries Act does not apply to this project.

#### 4.20.20 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

The proposed dredging and disposal activities have been coordinated with the National Marine Fisheries Service (NMFS) and consultation was completed April 22, 2003. The project is in full compliance with the Act.

#### 4.20.21 E.O. 11990, PROTECTION OF WETLANDS

Impacts to wetlands caused by project activities are not anticipated. This project is in compliance with the goals of this Executive Order.

#### 4.20.22 E.O. 11988, FLOOD PLAIN MANAGEMENT

No activities associated with this project would take place within a floodplain, therefore this project is in compliance with the goals of this Executive Order.

#### 4.20.23 E.O. 12898, ENVIRONMENTAL JUSTICE

The proposed action would not result in adverse health or environmental effects. Any impacts of this action would not be disproportionate toward any minority. The activity does not (a) exclude persons from participation in, (b) deny persons the benefits of, or (c) subject persons to discrimination because of their race, color, or national origin. The activity would not impact "subsistence consumption of fish and wildlife."

#### 4.20.24 E.O. 13089, CORAL REEF PROTECTION

No coral reef or coral reef organism would be impacted by this project.

## **5 LIST OF PREPARERS**

### **5.1 PREPARERS**

Preparer	Discipline	Role
Paul Stodola	Biologist	Principal Author
Brian Brodehl	Engineer	Construction/Operations
Grady Caulk	Archaeologist	Historic Properties

### **5.2 REVIEWERS**

Mr. James McAdams, supervisor, Atlantic Coast Section reviewed this final Environmental Assessment.

## **6 PUBLIC INVOLVEMENT**

### **6.1 SCOPING**

Public Notices (PN-CO-IWW-248 and PN-CO-IWW-264) dated March 2, 2001, and February 11, 2003, were issued for the project. Notices were mailed to appropriate local, state, and federal agencies as well as environmental groups. A Public Meeting was held on April 12, 2001, in order to give the public an opportunity to comment on the proposed maintenance dredging project and subsequent placement of the dredged material. The FIND held a Board of Commissioners Meeting on May 18, 2001, at which time the project was also discussed. A second Public Meeting was held on August 29, 2001, in order to give the public an additional opportunity to discuss the proposed project. Both Public Meetings were held in New Smyrna Beach.

### **6.2 COMMENTS RECEIVED AND RESPONSE**

Public comment during the above mentioned meetings indicated numerous concerns on how the proposed project may adversely affect the surrounding environment. The primary concern expressed was how dredged material placement may adversely affect driving on New Smyrna Beach. In response to this concern, alternative placement options for the dredged material have been identified which would not adversely affect vehicular access to the beach. Numerous suggestions were also made to transport the dredged material from the IWW to Bethune Beach. This option has been determined to be prohibitively expensive. Material could only be transported to this location if additional funding was acquired from another source other than FIND.

The National Marine Fisheries Service in their letter dated September 8, 2003, expressed concern on the proposed placement of dredged material into the designated



nearshore area and how this action may adversely affect Essential Fish Habitat. They suggested that “other efforts to supplant the natural littoral process, such as more frequent or continuous bypassing, may be less damaging to fishery resources and should be further evaluated in connection with this and future work at the inlet.” Corps personnel and Taylor Engineering, representing FIND, met with the NMFS and stated that the preponderance of available data indicates that impacts to marine life from this type of dredging operation are considered temporary and minor. However, the Corps and Volusia County intend to continue analyzing various alternatives to beneficially use dredged material to nourish area beaches.

The Central District Office of the Florida Department of Environmental Protection expressed concern regarding placement of dredged material slurry high in Sodium (Na) and its effects on groundwater in the vicinity of DMMA V-26. The local sponsor, FIND, has installed test wells in the vicinity of V-26 and would monitor for groundwater quality changes resulting from placement activities.

Concerned citizens, the city of New Smyrna Beach, and the State Historic Preservation Officer have expressed apprehension regarding project activities within or near the South Canal and Old Stone Wharf. Discharge water from DMMA V-26 would be piped through the South Canal in order to protect the banks from erosion. An anchor exclusion zone would be established in the area to be dredged adjacent to the Old Stone Wharf.

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## **APPENDIX A - SECTION 404(B) EVALUATION**

## **SECTION 404(b) EVALUATION**

### **MAINTENANCE DREDGING INTRACOASTAL WATERWAY (IWW)-VICINITY OF PONCE DE LEON INLET VOLUSIA COUNTY, FLORIDA**

#### **I. Project Description**

a. Location. The proposed work would be performed within cuts V-22 to V-40 of the IWW in the vicinity of Ponce de Leon Inlet, Volusia County, Florida.

b. General Description. The proposed plan calls for the maintenance dredging of the IWW. The preferred material placement options include placement of dredged material within the nearshore area ( up to 800,000 cy); V-26 (300,000 cy); and dune construction (up to 200,000 cy of the 800,000 cy to be placed in the nearshore area ).

c. Authority and Purpose. The present configuration (12 ft deep x 125 ft wide) of the project channel was authorized by House Document 740, 79<sup>th</sup> Congress, 2<sup>nd</sup> Session, 2 March 1945. Dredging would restore the authorized dimensions of the project channel.

#### **d. General Description of Dredged or Fill Material.**

(1) General Characteristics of Material. The material to be dredged is comprised primarily of fine sand suitable for beach and nearshore placement.

(2) Quantity of Material. Approximately 1,100,000 cubic yards of material would be removed from the project channel.

(3) Source of Material. The IWW, project channel, in the vicinity of Ponce de Leon Inlet.

#### **e. Description of the proposed Discharge Site.**

(1) Location. The nearshore placement area is located south of Ponce de Leon Inlet. DMMA V-26 is located in the City of Edgewater. The dune construction sites are located within the community of New Smyrna Beach between New Smyrna Beach Park south to 27<sup>th</sup> Avenue (refer to Section 3.2).

(2) Size. The nearshore area is approximately 551 acres. DMMA V-26 is 106.8 acres. There is also an undetermined area of dune construction.

(3) Type of Site. Nearshore area, upland management sites and beach.

(4) Type of Habitat. The nearshore area is an open-water site with a soft bottom. V-26 is an upland bermed area located within an industrial development park. The dune construction sites would be located within the upper beach along New Smyrna Beach.

(5) Timing and Duration of Discharge. Timing is undetermined but duration is estimated at 1 year. Dune construction would only occur outside the sea turtle nesting season, December 1 through April 14.

f. Description of Disposal Method. The IWW would be dredged (probably cutter head suction pipeline dredge) and a pipeline would be used to discharge the material to the various placement sites.

## II. Factual Determinations

### a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The project channel has a sloped bottom with depths ranging from less than 2-feet to in excess of 20-feet.

(2) Sediment Type. Fine sand, shell fragments and a trace of silt making the material suitable for beach and nearshore placement.

(3) Dredge/Fill Material Movement. Material placed within the nearshore area would eventually move with littoral currents.

(4) Physical Effects on Benthos. Benthic organisms would be impacted by dredging activity and placement operations. Recolonization should occur fairly rapidly, within one year.

### b. Water Circulation, Fluctuation and Salinity Determination.

(1) Water Column Effects. There would be a temporary increase in turbidity at the dredge site and nearshore area.

(2) Current Patterns and Circulation. Currents in the project area are primarily tidal. Dredging and material placement operations would not affect the currents.

(3) Normal Water Level Fluctuations and Salinity Gradients. Tides in the project area are semi-diurnal with varying levels throughout the year. Dredging and material placement operations would not affect normal tide fluctuations or salinity.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Material Placement Sites. There will be a minor temporary increase in turbidity within the dredging and nearshore placement sites.

(2) Effects on the Chemical and Physical Properties of the Water Column.

(a) Light Penetration. Light penetration would decrease during dredging and nearshore placement due to increased levels of turbidity. This effect would be temporary and would have no adverse impact on the environment.

(b) Dissolved Oxygen. Dissolved oxygen levels would not be altered by this project.

(c) Toxic Metals, Organics, and Pathogens. There are no known contaminants within the substrate of the project channel that would pose a human health hazard.

(d) Aesthetics. Aesthetic quality would be reduced during construction activities.

(3) Effects on Biota.

(a) Primary Productivity and Photosynthesis. Impacts to primary productivity during dredging operations would be short-term and insignificant.

(b) Suspension/Filter Feeders. There would be no long-term adverse impact to suspension/filter feeders.

(c) Sight Feeders. There would be no long-term adverse impact to sight feeders.

d. Contaminant Determinations.

e. Aquatic Ecosystem and Organism Determinations.



(1) Effects on Plankton. Levels of contaminants within the dredged material should not adversely impact these organisms.

(2) Effects on Benthos. Levels of contaminants within the dredged material should not adversely impact these organisms.

(3) Effects on Nekton. Levels of contaminants within the dredged material should not adversely impact these organisms.

(4) Effects on the Aquatic Food Web. No negative effects are anticipated.

(5) Effects on Special Aquatic Sites.

(a) Hardground and Coral Reef Communities. Hardground and coral reef communities do not exist within the project area.

(b) Sanctuaries and Refuges. The project is adjacent to Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters, both are designated as Outstanding Florida Waters.

(c) Wetlands. No negative effects are anticipated.

(d) Mud Flats. No negative effects are anticipated.

(e) Vegetated Shallows. No negative effects are anticipated.

(f) Riffle and Pool Complexes. No riffle and pool complexes would be impacted by this project.

(6) Endangered and Threatened Species. The proposed project may affect sea turtles and may affect but is unlikely to adversely affect manatees, Atlantic salt marsh snake, and piping plover. Coordination has been completed with the U.S. Fish and Wildlife Service and National Marine Fisheries Service and appropriate protective measures would be taken (see Sections 4.7 and 4.18).

(7) Other Wildlife. Project impacts to other wildlife in the construction area are expected to be minimal.

(8) Actions to Minimize Impacts. All practicable actions to minimize adverse impacts to natural resources that are found in the proposed construction area will be included in the project plans and specifications.

f. Proposed Material Placement Site Determinations.

(1) Mixing Zone Determination. This determination will be in accordance with the Water Quality Certification issued by the state.

(2) Determination of Compliance with Applicable Water Quality Standards. The work would be conducted in accordance with the state of Florida Water Quality Certification issued for this project.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and Private Water Supplies. No effects are anticipated.

(b) Recreational and Commercial Fisheries. Impacts caused by dredging and material placement activities would be minor and short-term.

(c) Water Related Recreation. Construction activities would temporarily disrupt recreational opportunities.

(d) Aesthetics. Construction would temporarily adversely impact the aesthetics of the area.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. Portions of the project channel lie adjacent to the Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters, both of which are designated as Outstanding Florida Waters.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. Maintenance of the region's transportation infrastructure, including the IWW, promotes development and may adversely affect aquatic ecosystems.

h. Determination of Secondary Effects on the Aquatic Ecosystem. Secondary effects that will adversely impact the aquatic ecosystem as a result of dredging and material placement activities would include higher levels of commercial and recreational boat traffic.

III. Findings of Compliance or Non-compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. No practicable alternative exists which meets the study objectives that do not involve discharge of fill into waters of the United States.

c. After consideration of material placement site dilution and dispersion, the discharge of fill materials would not cause or contribute to, violations of any applicable state water quality standards for Class III waters. The discharge operation would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act. A draft Water Quality Certification from the Florida Department of Environmental Protection has been issued for this project.

d. The proposed project would not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended. Coordination with the U.S. Fish and Wildlife Service has been completed.

e. The placement of fill material would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife would not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values would not occur.

f. On the basis of the guidelines, the proposed disposal site for the discharge of dredged material is specified as complying with the requirements of these guidelines.

## **APPENDIX B - COASTAL ZONE MANAGEMENT CONSISTENCY**

**FLORIDA COASTAL ZONE MANAGEMENT PROGRAM  
FEDERAL CONSISTENCY EVALUATION PROCEDURES**

**MAINTENANCE DREDGING  
INTRACOASTAL WATERWAY (IWW)-VICINITY OF NEW SMYRNA BEACH  
VOLUSIA COUNTY, FLORIDA**

1. Chapter 161, Beach and Shore Preservation. The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed plans and information have been voluntarily submitted to the state in compliance with this chapter.

2. Chapters 163(part II), 186, and 187, County, Municipal, State and Regional Planning. These chapters establish the Local Comprehensive Plans, the Strategic Regional Policy Plans, and the State Comprehensive Plan (SCP). The SCP sets goals that articulate a strategic vision of the state's future. It's purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed project has been coordinated with various federal, state and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the shorefront development and infrastructure.

3. Chapter 252, Disaster Preparation, Response and Mitigation. This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed project involves the dredging of cuts V-22 through V-40 of the IWW in order to maintain safe navigation conditions. Therefore, this project would be consistent with the efforts of the Division of Emergency Management.

4. Chapter 253, State Lands. This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed project will comply with state regulations pertaining to the above resources. The project would comply with the intent of this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition. This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: Since the affected property already is in public ownership or is under an easement for public placement use, this chapter does not apply.

6. Chapter 258, State Parks and Aquatic Preserves. This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed project has been coordinated with the state of Florida regarding project activities adjacent to Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters, both of which are designated as Outstanding Florida Waters.

7. Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: This project has been coordinated with the State Historic Preservation Officer (SHPO).

8. Chapter 288, Economic Development and Tourism. This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The maintenance dredging of the IWW encourages commercial and recreational use that in turn provides economic benefits to the area. Therefore, the work would be consistent with the goals of this chapter.

9. Chapters 334 and 339, Transportation. This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

Response: The maintenance dredging of the IWW promotes commercial and recreational navigation within the area and therefore is consistent with the goals of this chapter.

10. Chapter 370, Saltwater Living Resources. This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine

environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

Response: Dredging and placement activities would cause minor and temporary adverse impacts to saltwater living resources. Based on the overall impacts of the project, the project would be consistent with the goals of this chapter.

11. Chapter 372, Living Land and Freshwater Resources. This chapter establishes the Game and Freshwater Fish Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions, which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: Groundwater would be monitored in the vicinity of DMMA V-26. Otherwise, no living land or freshwater resources would be impacted by the proposed dredging. Therefore, the work would comply with the goals of this chapter.

12. Chapter 373, Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: This project does not involve water resources as described by this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The contract specifications would prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and would require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan would be required.

14. Chapter 377, Oil and Gas Exploration and Production. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This project does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore, this chapter does not apply.

15. Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development. This chapter also deals with the Area of Critical State Concern program and the Coastal Infrastructure Policy.

Response: The proposed dredging of the IWW has been coordinated with the local regional planning commission. Therefore, the project would be consistent with the goals of this chapter.

16. Chapters 381 (selected subsections on on-site sewage treatment and disposal systems) and 388 (Mosquito/Arthropod Control). Chapter 388 provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The project would not increase the potential propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

Response: Environmental protection measures would be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources would occur. Water Quality Certification would be sought from the state prior to construction. The project would comply with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: The proposed project is not located near or on agricultural lands; therefore, this chapter does not apply.



## **APPENDIX C - PERTINENT REPORTS AND CORRESPONDENCE**

February 11, 2003

Construction-Operations Division  
Public Notice NO. PN-CO-IWW-264

## **PUBLIC NOTICE**

TO WHOM IT MAY CONCERN: The District Engineer, Jacksonville District, U.S. Army Corps of Engineers, is in the process of submitting a revised application for water quality certification to the State of Florida, Department of Environmental Protection for maintenance dredging of a Federal waterway. This Public Notice supersedes Public Notice PN-CO-IWW-248, dated March 2, 2001, for the same project. This Federal project is currently being evaluated and coordinated pursuant to 33 CFR 335 through 338.

Comments regarding the project should be submitted either in writing or e-mail to the District Engineer at the above address within 30 days from the date of this notice. Any person who has an interest, which may be affected by the construction of this project, may request a public hearing. The request must be submitted in writing to the District Engineer within 30 days of the date of this notice and must clearly set forth the interest, which may be affected and the manner in which the interest may be affected by this activity.

If you have any questions concerning this application, you may contact Mr. Brian Brodehl of this office, telephone 904-232-3600; or E-mail: [brian.k.brodehl@saj02.usace.army.mil](mailto:brian.k.brodehl@saj02.usace.army.mil).

WATERWAY & LOCATION: Intracoastal Waterway (IWW) in the vicinity of Ponce de Leon Inlet, New Smyrna Beach, Volusia County, Florida.

WORK & PURPOSE: The proposed work consists of performing routine maintenance dredging of the federally authorized Intracoastal Waterway (IWW) navigation channel in Volusia County. The dredging will occur between IWW Cuts V-22 and V-40. Approximately 800,000 cubic yards of sand will be dredged and placed in the nearshore between the -12' and -32' contours (mean lower low water) between DEP monuments R-160 and R-173. An additional 300,000 cubic yards of sand will be placed into the upland containment area (V26) located in the City of Edgewater, Florida. Up to 200,000 cubic yards of the 800,000 cubic yards available may be used to construct shore protection dunes along the beach south of the inlet. The dune construction will be accomplished on a date by

case basis through coordination between the property owner and the Florida Inland Navigation District (FIND), who serves as local sponsor to the navigation project. The location of the dune construction is primarily within the *Transitional Zone* (from Smyrna Beach Park South to 27<sup>th</sup> Ave.) The material used to construct the dunes will be temporarily stockpiled over 300 feet of beach at approximate DEP monument R-161. Normal vehicle access along the beach will be maintained during the work.

The purpose of the maintenance dredging is to restore full navigation depth throughout the Volusia County reach of the Federal navigation project. Dredging will serve to eliminate the hazardous, and in some instances impassable navigation conditions created by the sand shoals.

PROJECT AUTHORIZATION: Rivers and Harbors Act of 2 March 1945, House Document 740, 79<sup>th</sup> Congress; and House Resolution Number 95-1247, 18 October 1978, 95 Congress, 2<sup>nd</sup> Session.

APPLICABLE LAWS: The following laws are, or may be, applicable to the review of the proposed disposal sites and to the activities affiliated with this Federal project:

1. Section 404 of the Clean Water Act of 1977 (PL 95-217) (33 U.S.C. 1344).
2. Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (PL 92-532) (33 U.S.C. 1413, 86 Stat. 1052).
3. Section 302 of the Marine Protection, Research, and Sanctuaries Act of 1972 (PL 92-532, 86 Stat. 1052).
4. The National Environmental Policy Act of 1969 (PL 91-190) (42 U.S.C. 4321-4347).
5. Sections 307(c)(1) and (2) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1456(c)(1) and (2), 86 Stat. 1280).
6. The Fish and Wildlife Act of 1956 (16 U.S.C. 472a et seq).
7. The Migratory Marine Game-Fish Act of 1959 (16 U.S.C. 760c-760g).
8. The Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661-666c).

9. The Endangered Species Act of 1973 (PL 93-205) (16 U.S.C. 668aa-668cc-6, 87 Stat. 884).

10. The National Historic Preservation Act of 1966 (16 U.S.C. 470, 80 Stat. 915).

11. Section 313 of the Clean Water Act of 1977 (33 U.S.C. 1323, 85 Stat. 816).

12. The Magnuson-Stevens Fishery Conservation and Management Act of 1966 (16 USC 1801 et seq. PL 104-208).

EVALUATION FACTORS: All factors, which may be relevant to the proposal, will be considered including the cumulative effects thereof. Among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic resources, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, seagrasses, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the public.

EVALUATION:

a. Environmental Assessment (EA): An EA for the Intracoastal Waterway, Volusia County maintenance dredging was completed in July 1993. The Findings of No Significant Impact (FONSI) was signed on August 3, 1993. Due to modifications of the project scope, the existing EA is under review and will be amended to address all new environmental concerns. The revised EA will mainly address the changes in dredge material placement alternatives to include the nearshore placement area and the upland containment area V26.

b. Environmental Impact Statement (EIS): The evaluation of the proposed maintenance dredging suggests that the proposed action would have no significant impacts on the quality of the human environment and an Environmental Impact Statement, pursuant to the National Environmental Policy Act (NEPA), will not be required.

c. Threatened or Endangered Species: Consultation with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act is on-going. The following species could be located in the project

area: Northern Right Whale, Green Sea Turtle, Hawksbill Sea Turtle, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Loggerhead Sea Turtle, West Indian Manatee, and Atlantic Salt Marsh Snake. Preliminary evaluation indicates that the proposed action may affect, but is not likely to adversely affect the Northern Right Whale, West Indian Manatee or Atlantic Salt Marsh Snake. The placement of material in the temporary beach stockpile may affect nesting sea turtles. Daily monitoring will be performed to ensure that any sea turtle nests are protected from construction activities.

d. Historical Resources: Investigation of existing cultural and historic resources has revealed that the South Canal, which leads to the V26 containment area, is a historic resource and is eligible for listing in the National Register of historic places. There are locations within the South Canal that could be adversely impacted by erosion from high water levels. Coordination is underway with the Florida State Historic Preservation Officer. Special precautions will be taken to prevent any impact to this resource during dredging activities.

e. Coastal Zone Management: The water quality certification application process will evaluate this project in accordance with the Florida Coastal Zone Management Act. As with past dredging projects within the Intracoastal Waterway in the vicinity of Ponce de Leon Inlet, the final project will be consistent with the goals and intent of the appropriate State statutes. This preliminary determination is based on the previous environmental evaluation, Section 404(b)(1) Evaluation, and Coastal Zone Consistency Determination for this project. Full compliance will be achieved by issuance of the WQC from the State of Florida.

The Florida Department of Environmental Protection (FDEP) has already issued a joint coastal permit (No. 0177220-002 JC), dated 24 December 2002, to FIND for use of the nearshore placement area to receive material from the navigation channel and from the offloading of M434C dredge material management area. It is anticipated that this permit will be modified to include the temporary beach stockpile area. Therefore, the Federal water quality certification from FDEP will not seek coastal zone consistency for these placement alternatives, as it will be included in the FDEP permit to FIND. Additionally, all contingency and monitoring requirements will be the responsibility of FIND as local sponsor for the Federal navigation project.

f. Essential Fish Habitat: This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the

Magnuson-Stevens Fishery Conservation and Management Act. The proposed maintenance dredging and placement of dredged material in the nearshore area would impact approximately 236 and 552 acres respectively of estuarine/inshore substrata and water column. These habitats are possibly utilized by red drum, penaeid shrimp, snapper-grouper complex, and coastal migratory pelagic fishes. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or Federally managed fisheries along the eastern coast of Florida. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and in coordination with the National Marine Fisheries Service.

DISSEMINATION OF NOTICE: You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have an interest in this matter.

COORDINATION: This notice is being sent to the following agencies:

FEDERAL AGENCIES:

FEDERAL HIGHWAY ADMINISTRATION  
U.S. COAST GUARD  
U.S. FISH & WILDLIFE SERVICE  
MARINE OPERATIONS CENTER, ATLANTIC  
NATIONAL MARINE FISHERIES SERVICE  
NATIONAL PARK SERVICE  
U.S. GEOLOGICAL SURVEY  
FEDERAL ENERGY REGULATIONS  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION  
FEDERAL MARITIME COMMISSION  
U.S. DEPARTMENT OF AGRICULTURE

STATE AGENCIES:

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF SOLID WASTE MANAGEMENT  
FLORIDA INLAND NAVIGATION DISTRICT  
FLORIDA GAME & FRESH WATER FISH COMMISSION  
DIVISION OF ARCHIVES, HISTORY & RECORDS  
STATE HISTORIC PRESERVATION OFFICE  
FLORIDA DEPARTMENT OF TRANSPORTATION  
SOIL CONSERVATION SERVICE  
BUREAU OF PUBLIC LANDS ADMINISTRATION  
BUREAU OF SOIL AND WATER CONSERVATION  
FLORIDA OFFICE OF ENTOMOLOGY  
FLORIDA WATER MANAGEMENT DISTRICTS

FLORIDA STATE CLEARINGHOUSE  
FLORIDA MARINE PATROL  
BUREAU OF STATE PLANNING  
FLORIDA DIVISION OF RECREATION  
NORTHEAST FLORIDA REGIONAL PLANNING COUNCIL  
HABITAT CONSERVATION SERVICE  
FLORIDA COASTAL CONSERVATION ASSOCIATION

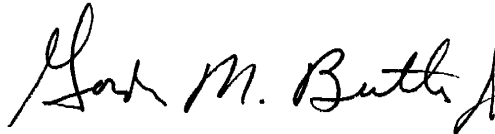
ENVIRONMENTAL ORGANIZATIONS:

FLORIDA AUDUBON SOCIETY  
NATIONAL AUDUBON SOCIETY  
FLORIDA WILDLIFE FEDERATION  
SIERRA CLUB  
FLORIDA DEFENDERS OF THE ENVIRONMENT  
NATIONAL ESTUARY PROGRAM  
SAVE THE MANATEE CLUB  
NATURE CONSERVANCY

LOCAL GOVERNMENTS:

VOLUSIA COUNTY PORT AUTHORITY  
COUNTY OF VOLUSIA  
CITY OF NEW SMYRNA BEACH  
CITY OF EDGEWATER

FOR THE COMMANDER:



Gordon M. Butler, Jr.  
Chief, Construction-Operations  
Division

Enclosure

In the Matter of an  
Application for Permit/Water Quality Certification,  
and Authorization to Use Sovereign Submerged Lands by:

**APPLICANT:**

U.S. Army Corps of Engineers  
P.O. Box 4970  
Jacksonville, FL 32232-0019

**PROJECT NAME:**

AIWW Vicinity of Volusia County  
  
File No. 0183817-001-JC  
Volusia County

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**CONSOLIDATED NOTICE OF INTENT TO ISSUE  
JOINT COASTAL PERMIT AND AUTHORIZATION TO USE  
SOVEREIGN SUBMERGED LANDS**

The Department of Environmental Protection gives consolidated notice of its intent to:

(a) issue a joint coastal permit under Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62 and 40, Florida Administrative Code (F.A.C.) for the activity described below (draft copy of permit attached). Issuance of the joint coastal permit also constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341.

(b) grant a letter of consent (to the local sponsor) to use sovereign submerged lands for the proposed dredging and nearshore disposal, under Article X, Section 11 of the Florida Constitution, Chapter(s) 253 and 258, F.S., and Title 18, F.A.C., and the policies of the Board of Trustees, as described below.

Issuance of the joint coastal permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

**I. DESCRIPTION OF THE PROPOSED ACTIVITY**

The applicant, U.S. Army Corps of Engineers, applied on May 7, 2001 to the Department of Environmental Protection for a permit/water quality certification to perform maintenance dredging along the Intracoastal Waterway in Volusia County. Approximately 400,000 to 800,000 cubic yards of material will be dredged every two to three years. Dredging will include cuts V-22 north of Ponce de Leon Inlet to cut V-40 south of the Mosquito Lagoon Aquatic Preserve to the



## **Consolidated Notice of Intent to Issue**

**File No. 0183817-001-JC**

**AIWW Maintenance Dredging, Volusia County**

**Page 2**

12 foot authorized depth plus 2-feet of allowable overdepth at mean low low water. Three wideners located in cuts V-23, V-24, V-26 (labeled as "sediment basins") will also be dredged to the 12 foot authorized depth plus 2-feet of allowable overdepth at mean low low water. Dredged material will be placed in Upland Disposal Site V26, as authorized in St. John's River Water Management District Permit # 4-127-65055-1, or in the nearshore disposal site authorized in Permit # 0177220-001-JC.

The activity is located within the Atlantic Intracoastal Waterway, in the vicinity of Ponce de Leon Inlet (north from Rose Bay to just south of Three Sisters Islands), Volusia County, Class II and III Waters, conditionally restricted and restricted Shellfish Harvesting Areas, partially within Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters, Outstanding Florida Waters.

### **II. AUTHORITY FOR REVIEW**

The Department has permitting authority under Chapter 161 and Part IV of Chapter 373, F.S., and Chapters 62B-41, 62B-49, 62-343, F.A.C. The activity qualifies for processing as a joint coastal permit pursuant to Sections 161.055 and 373.4145, F.S. Pursuant to Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing this application.

The activity also requires a proprietary authorization, as it is located on sovereign submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund. The activity is not exempt from the need to obtain a proprietary authorization. Pursuant to Article X, Section 11 of the Florida Constitution, Sections 253.002 and 253.77, F.S., Sections 18-21.0040, 18-21.0051, 18-20, 62-343.075, F.A.C., the policies of the Board of Trustees, and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department has the responsibility to review and take final action on this request for proprietary authorization.

### **III. BACKGROUND/BASIS FOR ISSUANCE**

#### **A. General**

Initial dredging of the area took place in the 1930's followed by periodic maintenance dredging of the channel. In 1987, cuts 24 through 26 and cuts 33 through 36 were dredged. Five years later, in 1992, cuts 23 through 29 were dredged. During the most recent dredging in 1994 cuts 24 through 39 were dredged. This material was placed on the beach between the inlet and the north jetty. The Corps has no record of dredging cuts 22 and 37 through 40, which are sections included as part of this application.

## **Consolidated Notice of Intent to Issue**

**File No. 0183817-001-JC**

**AIWW Maintenance Dredging, Volusia County**

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The U.S. Army Corps of Engineers applied for maintenance dredging of the Atlantic Intracoastal Waterway on May 7, 2001. In an effort to keep this sandy material within the littoral system, which would be in the public interest, the Corps coordinated their proposed maintenance dredging activities with the Florida Inland Navigation District (FIND) project to offload sand from their upland disposal site to a nearshore site. This led to a permit modification (number 0177220-005-JC) authorizing the direct placement of material dredged by the Corps into FIND's nearshore disposal site. Monitoring of the disposal site would be conducted under the requirements of permit number 0177220-005-JC.

Initially beach placement was desired, however, two concerns arose. First, the Department was concerned that the sediment would have a larger percent of fines than allowable by rule for placement on the dry beach. Of particular concern were the areas that had not yet been dredged. Geotechnical review of the material to be dredged by the CORPS demonstrated that the material is suitable for nearshore placement.

Second, citizens that have been driving along these beaches raised opposition, because they believed the material might make these areas unsuitable for driving.

A variance for an expanded turbidity mixing zone was requested with the original application because portions of the dredging would occur within Mosquito Lagoon Aquatic Preserve, where the turbidity standard prohibits elevation above background turbidity levels. The Department raised concerns about expanding the size of the turbidity mixing zone because it might encompass seagrasses within the area. Elevating turbidity in seagrass beds, especially those located within an aquatic preserve, would generally be considered contrary to the public interest. Recent seagrass surveys were not available, and the Corps was unable to provide resource maps without significantly delaying the project. In an effort to expedite maintenance dredging, the Department decided to allow a one-time deviation in the typical information required to provide reasonable assurance of no impacts to natural resources. The Department decided to use boathouse proximity as an indicator of water depths exceeding seagrass tolerance. Typically boathouses must be constructed in areas where no seagrasses occur (usually where water depths and turbidity are too great). The CORPS indicated that they would be able to maintain background turbidity levels within 25 meters. Depths along this 25-meter mixing zone boundary exceeded water depths at boathouse locations, therefore, a 25-meter mixing zone was deemed acceptable. Furthermore, subsequent modeling proved that a variance for an expanded mixing zone was not necessary given the sediment quality, type of dredge, and currents.

Areas of the project located within Mosquito Lagoon Aquatic Preserve must maintain turbidity at zero NTU's above background at the 25 meter mixing zone. Outside of the aquatic

preserve turbidity must be maintained at no more than 29 NTU's above background at the 25 meter mixing zone.

**IF RESOURCE PROTECTION MEASURES ARE ADDRESSED IN THE PLANS & SPECIFICATIONS TO OUR SATISFACTION, THE AGREEMENTS WILL BE SPELLED OUT HERE. THE FINAL PLANS AND SPECS WILL BE SUBSTANTIALLY SIMILAR TO THE EXCERPTS FROM THE DRAFT PLANS & SPECS INCLUDED HEREIN.**

The widener areas located within cuts V-23, V-24, and V-26 have some water depths that are shallower than the estimated limits of seagrass, as mentioned above. For this reason, this dredging may not begin until the Corps coordinates site inspections by BBSC staff (during the summer growing season) to confirm the absence of seagrasses at these sites.

**B. Specific Regulatory Basis for Issuance**

Through the above and based on the general/limiting and specific conditions to the permit, the applicant has provided affirmative reasonable assurance that the construction of the activity, considering the direct, secondary and cumulative impacts, will comply with the provisions of Part IV of Chapter 373, F.S., and the rules adopted thereunder. Specifically, construction of the activity will not result in violations of water quality standards pursuant to Section 373.414(1), F.S., and set forth in Chapters 62-4, 62-302, 62-520, 62-522, and 62-550, F.A.C. and will not degrade ambient water quality in Outstanding Florida Waters pursuant to Rule 62-4.242, F.A.C. The applicant also has demonstrated that the construction of the activity, is clearly in the public interest, pursuant to paragraph 373.414(1), F.S.

Furthermore, after considering the merits of the proposal and any written objections from affected persons, the Department finds that on compliance with the permit conditions, the activities indicated in the project description are of such a nature that they will result in no significant adverse impacts to the sandy beaches of the state; are not expected to adversely impact nesting sea turtles, their hatchlings, or their habitat; will not interfere, except during construction, with the use by the public of any area of the beach seaward of mean high water; and are appropriately designed in accordance with Rule 62B-41, F.A.C.

**C. Specific Proprietary Basis for Issuance**

Through the above and based on the general/limiting and specific conditions to the letter of consent, the applicant has met all applicable requirements for proprietary authorizations to use sovereign submerged lands, pursuant to Article X, Section 11 of the Florida Constitution,

Chapter(s) 253 and 258, F.S., associated Rule(s) 18-21 and 18-20, F.A.C., and the policies of the Board of Trustees. The applicant has provided reasonable assurance that the activity:

- (1) will clearly be "in the public interest";
- (2) will maintain essentially natural conditions;
- (3) will not cause adverse impacts to fish and wildlife resources or public recreation or navigation; and
- (4) will not interfere with the riparian rights of adjacent property owners.

In addition, the project is consistent with the goals and objectives of the "Conceptual State Lands Management Plan" adopted by the Board of Trustees on March 17, 1981, and modified on March 15, 1983.

#### **IV. PUBLICATION OF NOTICE**

The Department has determined that the proposed activity, because of its size, potential effect on the environment or the public, controversial nature, or location, is likely to have a heightened public concern or likelihood of request for administrative proceedings. Therefore, pursuant to Section 373.413(4), F.S., and paragraph 62-312.060(14), F.A.C., you (the applicant) are required to publish at your own expense the enclosed notice of this Consolidated Notice of Intent to Issue. The notice is required to be published one time within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to:

Department of Environmental Protection  
Office of Beaches and Coastal Systems  
3900 Commonwealth Boulevard, Mail Station 300  
Tallahassee, Florida 32399-3000

The proof of publication shall be provided to the above address within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time shall be grounds for denial of the permit and to use sovereign submerged lands.

#### **V. RIGHTS OF AFFECTED PARTIES**

The Department will issue the permit (draft attached) and consent to use sovereign submerged lands unless a sufficient petition for an administrative hearing is timely filed pursuant to sections 120.569 and 120.57, Florida Statutes, as provided below. The procedures for petitioning for a hearing are set forth below.

**Consolidated Notice of Intent to Issue**

**File No. 0183817-001-JC**

**AIWW Maintenance Dredging, Volusia County**

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A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Because the administrative hearing process is designed to redetermine final agency action on the application, the filing of a petition for an administrative hearing may result in a modification of the permit or even a denial of the application.

Under rule 62-110.106(4), Florida Administrative Code, a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon. If a request is filed late, the Department may still grant it upon a motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect.

In the event that a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Any intervention will be only at the discretion of the presiding judge upon the filing of a motion in compliance with rule 28-106.205, F.A.C.

In accordance with rules 28-106.111(2) and 62-110.106(3)(a)(1), F.A.C., petitions for an administrative hearing by the applicant must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first.

Under section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 14 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative

**Consolidated Notice of Intent to Issue**  
**File No. 0183817-001-IC**  
**AIWW Maintenance Dredging, Volusia County**  
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hearing within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57, F.S.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
- (c) A statement of when and how the petitioner received notice of the agency decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301, F.A.C. Under sections 120.569(2)(c) and (d), F.S., a petition for administrative hearing must be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of the Department.

This intent to issue constitutes an order of the Department. The applicant has the right to seek judicial review of the order under section 120.68, F.S., by the filing of a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee,

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Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

**STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION**

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Michael R. Barnett, P.E., Chief  
Bureau of Beaches and Coastal Systems

**Copies furnished to:**

Dave Herbster, DEP, Central District  
Robbin Trindell, FWCC, BPSM  
David Roach, FIND  
Steve Williams, Mosquito Lagoon Aquatic Preserve  
BBCS File

**FILING AND ACKNOWLEDGMENT**

FILED, on this date with the designated Department Clerk, pursuant to Section 120.52, Florida Statutes, receipt of which is hereby acknowledged.

Deputy Clerk

Date

## JOINT COASTAL PERMIT

**PERMITTEE/AUTHORIZED ENTITY:**

U.S. Army Corps of Engineers  
P.O. Box 4970  
Jacksonville, FL 32232-0019

Permit/Authorization No.: 0183817-001-JC

Date of Issue: XX

Expiration Date of Construction Phase:

XX (5-year)

County: Volusia

Project: AIWW Vicinity of Volusia County

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This permit is issued under the authority of Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62 and 40, Florida Administrative Code (F.A.C.). Pursuant to Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity.

**ACTIVITY DESCRIPTION:**

The project is to perform maintenance dredging along the Intracoastal Waterway in Volusia County. Approximately 400,000 to 800,000 cubic yards of material will be dredged every two to three years. Dredging will include cuts V-22 north of Ponce de Leon Inlet to cut V-40 south of the Mosquito Lagoon Aquatic Preserve to the 12 foot authorized depth plus 2-feet of allowable overdepth at mean low low water. Three wideners located in cuts V-23, V-24, V-26 (labeled as "sediment basins") will also be dredged to the 12 foot authorized depth plus 2-feet of allowable overdepth at mean low low water. Dredged material will be placed in Dredged material will be placed in Upland Disposal Site V26, as authorized in St. John's River Water Management District Permit # 4-127-65055-1, or in the nearshore disposal site authorized in Permit # 0177220-001-JC.

**ACTIVITY LOCATION:**

The activity is located within the Atlantic Intracoastal Waterway, in the vicinity of Ponce de Leon Inlet (north from Rose Bay to just south of Three Sisters Islands), Volusia County, Class II and III Waters, conditionally restricted and restricted Shellfish Harvesting Areas, partially within Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters, Outstanding Florida Waters.

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act. This permit also



constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341.

This activity also requires a proprietary authorization, as the activity is located on sovereign submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund, pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary authorization. The Department has the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051, F.A.C., and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. In addition to the above, this proprietary authorization has been reviewed in accordance with Chapter 253 and Chapter 258, F.S., Chapter 18-20, Chapter 18-21, Section 62-343.075, F.A.C., and the policies of the Board of Trustees.

As staff to the Board of Trustees, the Department has reviewed the activity described above, and has determined that the activity qualifies for a consent to use sovereign, submerged lands, as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein. Therefore, consent is hereby granted, pursuant to Chapter 253.77, F.S., to perform the activity on the specified sovereign submerged lands. |

The above named permittee is hereby authorized to construct the work shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof. **This permit (# 0183817-001-JC) is subject to the limits, conditions, and locations of work shown in the attached drawings, and is also subject to the General Conditions and Specific Conditions, which are a binding part of this permit. The approved Plans & Specification are also an enforceable part of this permit.** You are advised to read and understand these drawings and conditions prior to commencing the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings. If you are utilizing a contractor, the contractor also should read and understand these drawings and conditions prior to commencing the authorized activities.

#### **GENERAL CONDITIONS:**

1. All activities approved shall be implemented as set forth in the drawings incorporated by reference and in compliance with the conditions and requirements of this document. The Corps shall notify the Department in writing of any anticipated significant deviation from this authorization prior to implementation so that the Department can determine whether a modification is required. If the Department determines that a deviation is significant, then the Corps or the local sponsor, as appropriate, shall apply for and obtain the modification prior to its implementation.

2. If, for any reason, the Corps does not comply with any condition or limitation specified herein, the Corps shall immediately provide the Department with a written report containing the following information: a description of and cause of noncompliance; and the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. Compliance with the provisions of this condition shall not preclude the Department from taking any enforcement action allowed under state law to the extent that federal sovereign immunity has been waived under 33 U.S.C. 1323 and 1344(t).

3. The Corps shall obtain any applicable licenses or permits, which may be required by federal, state, local or special district laws and regulations. Nothing herein constitutes a waiver or approval of other Department permits or authorizations that may be required for other aspects of the total project. Projects shall not proceed until any other required permits or authorizations have been issued by the responsible agency.

4. Nothing herein conveys title to land or water, constitutes State recognition or acknowledgment of title, or constitutes authority for the use of sovereign land of Florida seaward of the mean high-water line, or, if established, the erosion control line, unless herein provided, and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State.

5. Any delineation of the extent of a wetland or other surface water submitted as part of the application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this authorization or a formal determination under section 373.421(2), F.S., provides otherwise.

6. Nothing herein conveys to the Corps or creates in the Corps any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the Corps or local sponsor, or convey any vested rights or any exclusive privileges.

7. This document or a copy thereof, complete with all conditions, attachments, modifications, and time extensions shall be kept at the work site on the authorized activity. The Corps shall require the contractor to review this document prior to commencement of the authorized activity.

8. The Corps specifically agrees to allow Department personnel with proper identification, at reasonable times and in compliance with Corps specified safety standards access to the premises where the authorized activity is located or conducted for the purpose of ascertaining compliance with the terms of this document and with the rules of the Department and to have access to and copy any records that must be kept; to inspect the facility, equipment, practices, or operations

regulated or required; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance. Reasonable time may depend on the nature of the concern being investigated.

9. At least forty-eight (48) hours prior to the commencement of authorized activity, the Corps shall submit to the Department a written notice of commencement of activities indicating the anticipated start date and the anticipated completion date.

10. If historic or archaeological artifacts are discovered at any time on the project site, the Corps shall immediately notify the State Historic Preservation Officer, and if a significant deviation is necessary, shall also notify the Department.

11. Within a reasonable time after completion of project construction or a periodic maintenance dredging event, the Corps shall submit to the Department a written statement of completion. This statement shall notify the Department that the work has been completed as authorized and shall include a description of the actual work completed. The Department shall be provided, if requested, a copy of any as-built drawings required of the contractor or survey performed by the Corps.

#### **SPECIFIC CONDITIONS:**

1. Prior to issuance of a Notice to Proceed the following must be completed:

- a. At least 60 days prior to each dredging event, the Corps will provide two copies of the final construction plans and specifications for all authorized activities to the BBCS, which include the project specifications listed in this permit. The cover sheet, with which the Plans and Specs are transmitted, shall provide itemized citations to the resource protection measures outlined in the Intent to Issue that address the resource concerns indicated by the Department.
- b. At least 30 days prior to the commencement of each maintenance dredging event to be conducted during the term of this permit, the Corps shall submit a proposed schedule of dredging for the maintenance dredging event to the following:

DEP, Bureau of Beaches and Coastal Systems  
JCP Compliance Officer  
3900 Commonwealth Boulevard, Mail Station 300  
Tallahassee, Florida 32399-3000

DEP, Central District Office  
3319 Maguire Blvd., Suite 232

**AIWW Maintenance Dredging, Volusia County  
DRAFT Permit No. 0183817-001-JC**

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Orlando, FL, 32803

and

Florida Inland Navigation District  
David Roach  
1314 Marcinski Road  
Jupiter, FL, 33477.

- c. At least 30 days prior to commencement of the initial maintenance dredging event, the Corps shall coordinate site inspections by BBCS staff (during the summer growing season) to confirm the absence of seagrasses at widener areas located within cuts V-23, V-24, and V-26.
2. At least 7 days prior to the planned commencement date of each maintenance dredging event to be conducted during the term of this permit, the permittee shall schedule a pre-construction conference to review the specific conditions and monitoring requirements of this permit with the permittee's contractors, work crews, the Department's permit staff representative. The permittee shall provide a minimum 7 days advance written notification to the following offices advising of the date, time, and location of the pre-construction conference. If sand is being placed in the nearshore area under the FIND permit (0177220-005-JC), the two pre-construction conferences may be combined.

DEP Bureau of Beaches and Coastal Systems  
JCP Compliance Officer  
Mail Station 300  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000  
phone: (850) 487-4471

DEP Bureau of Protected Species Management  
Mail Station 245  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000  
phone: (850) 922-4330

DEP Central District Office  
Submerged Lands and Environmental Resources Program  
3319 Maguire Blvd.  
Orlando, Florida 32803-3767  
phone: (407) 894-7555

6. If seagrasses are observed within the 25-meter mixing zone, dredging must **cease immediately** and the Bureau of Beaches and Coastal Systems, Compliance Officer, must be notified immediately. Seagrass mapping (classification, quantity, and quality) must be conducted prior to reinitiating dredging.
7. Impact to mangrove areas caused by pipeline access and other construction activities shall be avoided. Mangrove areas that are inadvertently impacted by pipeline access or construction activities shall be restored to their pre-existing state including replacement of any mangroves that are damaged or destroyed. All impacts must be reported within 24 hours to the Bureau of Beaches and Coastal Systems, JCP Compliance Officer (phone: (850) 487-4471).
8. Impact to dune vegetation caused by pipeline access and other construction activities shall be avoided. Dune areas that are inadvertently impacted by pipeline access or construction activities shall be restored to their pre-existing state including replacement of any dune vegetation that is damaged or destroyed. All impacts must be reported within 24 hours to the Bureau of Beaches and Coastal Systems, JCP Compliance Officer (phone: (850) 487-4471).

**Add FWC conditions (Bureau is waiting on revised conditions)**

**Water Quality Monitoring Required:**

Turbidity - Nephelometric Turbidity Units (NTUs)

**Dredging Location:**

Frequency: Every four (4) hours during all daylight dredging operations.

Background: 300 meters from the suction head in the opposite direction of the prevailing current flow, clearly outside the influence of any turbid plume. Samples shall be collected from mid-depth.

Compliance: No more than 25 meters downcurrent from the dredge site, in the densest portion of any visible turbidity plume. Samples shall be collected from mid-depth.

**Turbidity Standards to be met:**

Outside of the Outstanding Florida Waters of Mosquito Lagoon Aquatic Preserve and Spruce Creek Special Waters (cuts ~~XX-XX~~) turbidity levels shall not exceed 29 NTU's above background.

Within the Mosquito Lagoon Aquatic Preserve (cuts 38-40) and the Spruce Creek Special Waters (cuts ~~XX-XX~~) turbidity levels can not exceed 0 NTU's above background.

The compliance locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. During all maintenance dredging and disposal

operations, turbidity levels shall not exceed the standards and mixing zone limits indicated above. If monitoring reveals turbidity levels at the compliance sites exceed the standards, construction activities shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

The following measures shall be taken by the permittee whenever turbidity levels at the limit of the mixing zone exceed the standards described in the Monitoring Required section, pursuant to Rule 62-302, F.A.C.:

- a. Immediately cease all work contributing to the water quality violation.
- b. Modify the work procedures that were responsible for the violation.
- c. Notify the Bureau of Beaches and Coastal Systems, JCP compliance Officer, at (850) 487-4471 and the DEP Central District Office at (407) 894-7555 within 24 hrs. of the time the violation is first detected.

Copies of all turbidity reports shall be submitted to the JCP Compliance Officer, Bureau of Beaches and Coastal Systems in Tallahassee on a weekly basis within seven days of collection. The data shall be submitted under a cover letter containing the following information: (1) "AIWW Maintenance Dredging, Volusia County, Permit No. 0183817-001-JC"; (2) a statement describing the methods used in collection, handling, storage and analysis of the samples; (3) a map indicating the sampling locations; and (4) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data; (5) the cut number.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

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Michael R. Barnett, P.E., Chief  
Bureau of Beaches and Coastal Systems

**FILING AND ACKNOWLEDGMENT**

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated  
Department Clerk, receipt of which is hereby acknowledged.

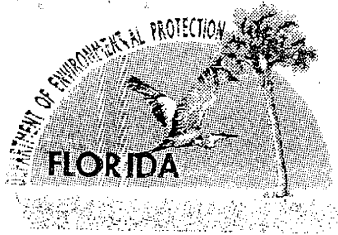
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Deputy Clerk

Date

Prepared by \_\_\_\_\_.

\_\_\_\_\_ pages attached.



Jeb Bush  
Governor

# Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

David B. Struhs  
Secretary

April 18, 2003

Mr. Brian Brodehl  
Jacksonville Dist. Corps of Engineers  
PO Box 4970  
Jacksonville, FL 32232-0019

RE: Department of the Army - Jacksonville District Corps of Engineers - Public Notice No. PN-CO-IWW-264 - Maintenance Dredging of Federally-Authorized Intracoastal Water (IWW) Navigation Channel - Volusia County, Florida.

SAI: FL200302203440C

Dear Mr. Brodehl:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated the review of the above-referenced public notice for the proposed project.

The Department of Environmental Protection (DEP) states that it will review and process this project and provide applicable authorization to use sovereign submerged lands. The DEP Bureau of Beaches and Wetland Resources, in Tallahassee, will process the application. There are concerns about the effects of spoil sites on the sea turtle population in the area. It is recommended that DEP Best Management Practices for channel dredging and manatee protection be applied. DEP notes that the maintenance dredging of a federally approved channel and renourishment of public beaches, qualifies for authorization as a Letter of Consent, pursuant to Section 18-21.005 F.A.C.

Additionally, DEP notes that there are three solid waste management facilities within the project; the New Smyrna Beach closed landfill on Turnbull Bay and Industrial Drives, the New Smyrna Beach Transfer Station, on Turnbull Bay Drive, and the Edgewater Transfer Station, on Mango Tree Road. For additional information you may contact Mr. Laxsamee Levin at (407) 893-3328, extension 2311.

*"When Innovation, Goes Forward"*



Mr. Brian Brodehl

April 18, 2003

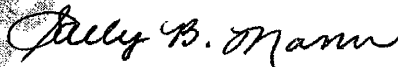
Page 2

The DEP is charged with protecting, conserving and restoring Florida's valuable ground water resource under specific authorities granted in Chapters 62-520 and 62-522 F.A.C. The proposed discharge of sediment and saltwater at the disposal sites will likely cause some adverse impacts on the ground water quality in the surficial aquifer. At least one of the sites is on the beach and should be acceptable from a groundwater standpoint. However, at least two sites are inland and may be around private property and possible shallow wells. DEP notes several concerns regarding effects on the groundwater in the project area. Please refer to the enclosed DEP memo for specific details.

The Florida Department of State (DOS) has determined from DOS records and the Florida Master Site File, that a recorded archaeological site, the South Canal Site (8V0113), is located within the area of potential effect for this project (see enclosure). Site 8V0113 is a shell mound located in close proximity to the South Canal. DOS also notes that Site VO113 is located within containment area V-26. Since a potentially significant archeological site may be present, the DOS recommends that the containment area be subjected to a systematic, professional, archeological and historical survey. Please refer to the enclosed DOS comments for further details.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Suzanne E. Ray at 850/245-2172.

Yours sincerely,



Sally B. Mann, Director  
Office of Intergovernmental Programs

SBM/sr

Enclosures

cc: Barbara Bess, DEP Central District  
Geoffrey Sample, SJRWMD  
Laura Kammerer, DOS

**TO:** Florida State Clearinghouse

**FROM:** Suzanne Ray, Environmental Specialist  
Office of Intergovernmental Programs

**DATE:** April 18, 2003

**PROJECT:** Department of the Army - Jacksonville District Corps of Engineers -  
Public Notice No. PN-CO-IWW-264 - Maintenance Dredging of  
Federally-Authorized Intracoastal Water (IWW) Navigation Channel,  
Volusia County, Florida.

**SAI:** FL200302203440C

---

The Department has reviewed the above-referenced project. Based upon the information submitted, the proposed project appears to be consistent with the Department's statutory authorities in the Florida Coastal Management Program.

The Central District Office of DEP has the following concerns regarding effects on the groundwater in the project area:

**Ground Water:**

1. At least one of the sites is on the beach and should be acceptable from a groundwater standpoint. However, at least two sites are inland and may be around private property and possibly shallow wells.
2. It is unlikely, under standard ground water criteria, that the disposal site can be in compliance, because the primary parameter, Sodium (Na), needs to be <160 mg/l at the edge of the 100 feet zone of discharge (ZOD). Seawater concentration of Na is 10,500 mg/l. It is doubtful this large volume and concentration can be in compliance at the edge of the ZOD. It is unlikely that the site can be permitted under Chapter 62-522, F.A.C. unless it gets a Na exemption, and that is probably not a viable alternative if there are private wells in the area.
3. The Department of Environmental Protection is charged with protecting, conserving and restoring Florida's valuable ground water resource under specific authorities granted in Chapters 62-520 and 62-522 F.A.C. The proposed discharge of sediment and saltwater at the disposal sites will likely cause some adverse impacts on the ground water quality in the surficial aquifer.
4. Based on the aforementioned provisions and facts, the applicant should coordinate an approval of a ground water monitoring plan with the Ground Water Section of the Water Resource Management Division at the DEP Central District office in Orlando.

5. Please be advised that the proposal of the Ground Water Monitoring Plan would specifically require including the following items for all upland areas such as V-26 and Lost Creek Containment Area:
  - a. Proposal of both background and compliance monitoring wells together with proposed well construction details.
  - b. Characterization of the background water quality in the surficial aquifer.
  - c. An inventory of well survey of all potable and non-potable wells within 2000 feet of the outer edges of the project boundaries. This survey shall include a site map showing the location of each well together with information about the owner, address, well depth, and well use (e. g. irrigation, potable etc.).
  - d. Proposed parameters to be monitored in the ground water.
  - e. If there are perimeter ditches, scaled cross sections of the disposal area with ditches will be needed.
  - f. Please advise if DEP is not to be coordinating the ground water monitoring activities under any other specific authorities or approvals provided by other regulatory agencies.

For additional information, please contact Ms. Barbara Bess, at the DEP Central District Office, in Orlando, at (407) 894-7555.



FLORIDA DEPARTMENT OF STATE

Glenda E. Hood

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Ms. Cindy Cranick  
Florida State Clearinghouse Coordinator  
Florida Department of Environmental Protection  
3900 Commonwealth Boulevard, Mail Station 47  
Tallahassee, Florida 32399-3000

March 26, 2003

RE: DHR Number: 2003-1444 / Received by DHR: February 24, 2003  
SAI Number: FL200302203440C  
U S Corps of Engineers Public Notice Number: PN-CO-IWW-264  
Maintenance Dredging Intracoastal Waterway – Ponce Inlet Vicinity  
Volusia County, Florida

Dear Ms. Cranick:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and 36 *C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying cultural resources listed, or eligible for listing in the National Register of Historic Places (NRHP), assessing the project's effects, and considering alternatives to avoid or reduce the project's adverse effects.

Based on the information provided in the above permit application, our records, and the Florida Master Site File, we note that a recorded archaeological site, the South Canal Site (8VO113), is located within the area of potential effect for this project (see enclosure). Site 8VO113 is a shell mound located in close proximity to the South Canal. We note that Site VO113 occurs within containment area V-26.

Since a potentially significant archaeological site may be present, we recommend that this containment area be subjected to a systematic, professional archaeological and historical survey. The purpose of this survey will be to locate and assess the significance of cultural resources present. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46, *Florida Administrative Code*, and will need to be forwarded to this agency in order to complete the process of reviewing the impact of this proposed project on cultural resources. The result of the investigations will determine if significant archaeological resources would be

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☐ Director's Office

☐ Archaeological Research

☒ Historic Preservation

☐ Historical Museums

50) 245-6300 • FAX: 245-6435

(850) 245-6444 • FAX: 245-6436

(850) 245-6333 • FAX: 245-6437

(850) 245-6400 • FAX: 245-6433

☐ Palm Beach Regional Office  
(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office  
(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office  
(813) 272-3843 • FAX: 272-2340

Ms. Cranick  
March 26, 2003  
Page 2

disturbed by this project. In addition, should significant remains be located, the data described in the report and the consultant's conclusions will assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to cultural resources listed, or eligible for listing in the NHRP, or otherwise of historical or archaeological significance.


This letter and its contents are a matter of public record. If consultants who have knowledge of our recommendations contact the applicant, this should in no way be interpreted as an endorsement by this agency. The *Registry of Professional Archaeologist* (RPA) is the national certifying organization for archaeologists. A listing of archaeologists who are RPA members living or working in Florida can be accessed at <http://dhr.dos.state.fl.us/bhp/compliance>. In addition, the complete RPA Directory of Certified Professional Archaeologists is available at [www.rpanet.org](http://www.rpanet.org). Otherwise, upon request, we will forward our RPA list to the applicant.

It should also be noted that the South Canal is part of a recorded resource, the Turnbull Canal System (8VO7056). Therefore, if project activities will adversely impact Site 8VO7056, the proposed project is required to undergo further review by this office.

If you have any questions concerning our comments, please contact Samantha Earnest, Historic Sites Specialist, at [searnest@mail.dos.state.fl.us](mailto:searnest@mail.dos.state.fl.us) or (850) 245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

 Frederick P. Gaehe, Deputy SHPO

 Janet Snyder Matthews, Ph.D., Director, and  
State Historic Preservation Office

XC: Jasmin Raffington, FCMP-FDEP

Enclosure

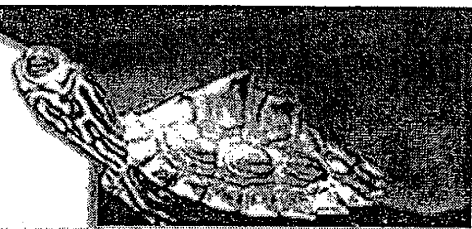




# Florida

## Department of Environmental Protection

"More Protection, Less Process"



Categories

[DEP Home](#) | [Contact DEP](#) | [Search](#) | [DEP Site Map](#)

Project Information	
<b>Project:</b>	FL200302203440C
<b>Due Date:</b>	MARCH 22, 2003
<b>Description:</b>	Department of the Army - Jacksonville District Corps of Engineers - Public Notice No. PN-CO-IWW-264 - Maintenance Dredging of Federally-Authorized Intracoastal Water (IWW) Navigation Channel - Volusia County, Florida.
<b>Keywords:</b>	ACOE - Public Notice - Dredging IWW - Volusia
<b>Program:</b>	
Agency Comments:	
<b>E. CENTRAL FL RPC - EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL</b>	
The proposed project, as presented for review and when considered in its entirety, is consistent with the adopted Goals, Policies and Objectives of the East Central Florida Regional Planning Council.	
<b>ENVIRONMENTAL POLICY UNIT - OFFICE OF POLICY AND BUDGET, ENVIRONMENTAL POLICY UNIT</b>	
No Final Comments Received	
<b>COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS</b>	
No Comment	
<b>FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION</b>	
No Final Comments Received	
<b>STATE - FLORIDA DEPARTMENT OF STATE</b>	
Based on the information provided in the above permit application our records and the Florida Master Site file, we note that a recorded archaeological site, the South Canal Site (8V0113), is located within the area of potential effect for this project (see enclosure). site 8V0113 is a shell mound located in close proximity to the South Canal. We note that the Site V0113 occurs within containment area V-26.	
<b>TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION</b>	
No Comments	
<b>ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION</b>	
No Final Comments Received	
<b>ST. JOHNS RIVER WMD - ST. JOHNS RIVER WATER MANAGEMENT DISTRICT</b>	
No SJRWMD permit is needed for this work. Florida Department of Environmental Protection will review and authorize the maintenance dredging of the navigational dredging as described by section II(A)(1)(i) of the Operating Agreement established between the two agencies: The Department shall review and take final action on all applications for permits [for] docking facilities, boardwalks, shore protection structures and piers, including the adjacent docking and boating related development and navigational dredging. It is also significant that the work has been authorized by a Department dredge-and-fill permit.	

For more information please contact the Clearinghouse Office at:

AGENCY CONTACT AND COORDINATOR (SCH)  
 3900 COMMONWEALTH BOULEVARD MS-47  
 TALLAHASSEE, FLORIDA 32399-3000  
 TELEPHONE: (850) 245-2161  
 FAX: (850) 245-2190

Visit the [Clearinghouse Home Page](#) to query other projects.

JNTY: VOLUSIA

DATE: 2/20/03

COMMENTS DUE DATE: 3/22/03

CLEARANCE DUE DATE: 4/21/03

SAI#: FL200302203440C

STATE AGENCIES

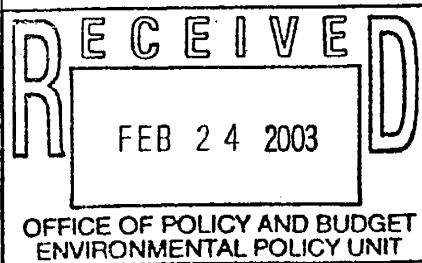
COMMUNITY AFFAIRS  
FISH and WILDLIFE COMMISSION  
STATE  
TRANSPORTATION  
ENVIRONMENTAL PROTECTION

WATER MNGMNT. DISTRICTS

ST. JOHNS RIVER WMD

OPB POLICY UNITS

X ENVIRONMENTAL POLICY UNIT



Attached document requires a Coastal Zone Management Act/Florida  
Management Program consistency evaluation and is categorized  
of the following:

Federal Assistance to State or Local Government (15 CFR 930, Subpart F).  
Agencies are required to evaluate the consistency of the activity.

Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are  
required to furnish a consistency determination for the State's  
concurrence or objection.

Outer Continental Shelf Exploration, Development or Production  
Activities (15 CFR 930, Subpart E). Operators are required to provide a  
consistency certification for state concurrence/objection.

Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such  
projects will only be evaluated for consistency when there is not an  
analogous state license or permit.

Project Description:

Department of the Army - Jacksonville District  
Corps of Engineers - Public Notice No. PN-CO-  
IWW-264 - Maintenance Dredging of Federally-  
Authorized Intracoastal Water (IWW) Navigation  
Channel - Volusia County, Florida.

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Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)

2555 SHUMARD OAK BLVD  
TALLAHASSEE, FLORIDA 32399-2100  
(850) 414-6580 (SC 994-6580)  
(850) 414-0479

EO. 12372/NEPA

- ☒ No Comment *on Public Notices*  
☐ Comment Attached  
☐ Not Applicable

Federal Consistency

- ☐ No Comment/Consistent  
☐ Consistent/Comments Attached  
☐ Inconsistent/Comments Attached  
☐ Not Applicable

1:

Division/Bureau: *OPB. Env. Policy*

Reviewer: *M. Tanner*

Date: *2/26/03*



DATE: 2/20/03

COMMENTS DUE DATE: 3/22/03

CLEARANCE DUE DATE: 4/21/03

SAI#: FL200302203440C

**sage:**

## STATE AGENCIES

**COMMUNITY AFFAIRS  
FISH and WILDLIFE COMMISSION  
STATE  
TRANSPORTATION  
ENVIRONMENTAL PROTECTION**

## WATER MNGMNT. DISTRICTS

ST. JOHNS RIVER WMD

OPB POLICY UNITS

ENVIRONMENTAL POLICY UNIT

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**Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

### Project Description:

**Department of the Army - Jacksonville District  
Corps of Engineers - Public Notice No. PN-CO-  
IWWW-264 - Maintenance Dredging of Federally-  
Authorized Intracoastal Water (IWWW) Navigation  
Channel - Volusia County, Florida.**

## Florida State Clearinghouse

**AGENCY CONTACT AND COORDINATOR (SCH)**

2555 SHUMARD OAK BLVD

TALLAHASSEE, FLORIDA 32399-2100

(850) 414-6580 (SC 994-6580)

(850) 414-0479

## EO. 12372/NEPA

☒ No Comment☐ Comment Attached☐ Not Applicable

## Federal Consistency

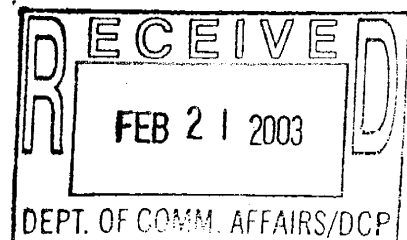
☐ No Comment/Consistent☐ Consistent/Comments Attached☐ Inconsistent/Comments Attached☐ Not Applicable

7:

Division/Bureau:

Reviewer:

Date:



STATE CLEARINGHOUSE

OCGA Item #: 2346

SAI #: FL200302243440C  
ICW Maintenance Dredging, Volusia County

Comment Entered On-line: N/A (emailed 3/05/2003)

Comment:

No SJRWMD permit is needed for this work. Florida Department of Environmental Protection will review and authorize the maintenance dredging of the navigational dredging as described by section II(A)(1)(i) of the Operating Agreement established between the two agencies:

*The Department shall review and take final action on all applications for permits [for] docking facilities, boardwalks, shore protection structures and piers, including the adjacent docking and boating related development and navigational dredging.*

It is also significant that the work has been authorized by a Department dredge-and-fill permit.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

6620 Southpoint Drive South  
Suite 310  
Jacksonville, Florida 32216-0958

IN REPLY REFER TO:  
FWS/R4/ES-JAFL

September 22, 2003

Mr. James Duck  
Chief, Planning Division  
U.S. Army Corps of Engineers  
Post Office Box 4970  
Jacksonville, Florida 32232-0019  
(Attention: Paul Stodola)

Dear Mr. Duck:

This document transmits the U.S. Fish and Wildlife Service's (USFWS) biological opinion (FWS Log No. 03-753) based on our review of the proposed maintenance dredging of the Intracoastal Waterway (IWW) in the vicinity of Ponce de Leon Inlet, Volusia County, Florida and its potential effect on green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and loggerhead (*Carretta carretta*) sea turtles. We provide this opinion in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). We also have included our response to your additional section 7 determinations on the potential effects of the proposed dredging on the West Indian (Florida) manatee (*Trichechus manatus latirostris*), Atlantic salt marsh snake (*Nerodia clarkii taeniata*) and the piping plover (*Charadrius melodus*) and its designated critical wintering habitat.

The biological opinion is based on a review of the preliminary environmental assessment (PEA) accompanying your March 18, 2003 correspondence requesting initiation of formal consultation, local sea turtle nesting information provided by the Florida Marine Research Institute, field trips to the proposed project area, and other sources of information. A complete administrative record of this consultation is on file at the Jacksonville, Florida Ecological Services Field Office.

### CONSULTATION HISTORY

Initial requests for consultation were provided in letters dated April 26, 2001 and November 21, 2001. The second letter eliminated from consideration part of the original proposal to place beach quality dredged material along the shoreline of New Smyrna Beach between DNR

monuments R-140 and R-175). More recently, the Corps also eliminated the off-loading of an existing spoil disposal site, MSA 434C, for the purpose of depositing that material either in the nearshore waters of the Atlantic Ocean off of or for the construction of sand dunes.

The Service advised the Corps to request initiation of formal consultation on the manatee as a result of the Service's January 22, 2003 internal memorandum requiring biological opinions for all watercraft-related activities that may affect manatees. That policy was rescinded on May 5, 2003 following publication of a negative finding for a special rule to allow incidental take of manatees under the Marine Mammal Protection Act (U.S. Fish and Wildlife Service 2003). Since that time, the Service has made multiple reviews of its section 7 consultation guidelines and policies as they pertain to potential impacts to manatees from watercraft-related activities in peninsula Florida. The most recent review, completed at the beginning of this month, calls for the preparation of biological opinions for all projects involving watercraft access that may affect manatees. Formal or informal consultation may be used for all other projects occurring within manatee habitat in peninsula Florida.

We concur with the Corps' determination on the sea turtle and Atlantic salt marsh snake. The proposed area to stockpile dredged material on the beach, and the location of the pipeline conveying that material from the IWW, is just south of designated wintering critical habitat for the piping plover. While we concur with the Corps determination that the proposed work would not have any effect on that habitat, we also believe that it is possible for piping plovers to be present in the vicinity of the pipeline and temporary beach stockpile area. It is our view that any disturbance of plovers resulting from the preceding activities, however, would not rise to the level of take, given the birds' mobility and availability of additional foraging and loafing habitat north and west of the site in the immediate vicinity of Ponce de Leon Inlet. As a result, we believe that the proposed project may affect, but is not likely to adversely affect, the piping plover. Regarding the manatee, the Service has, for past maintenance dredgings of the IWW, used informal consultation to complete its section 7 obligations. Because the current project is similar to past maintenance dredging consultations, and as a result of our most recent guidance on section 7 consultation on manatees as described previously, we have decided not to initiate formal consultation on this species. In its preliminary Environmental Assessment, the Corps has indicated that it will include certain manatee conditions in its project plans and specifications (see Section below on "Description of the Proposed Action"). We concur with those conditions and as a result, we believe that the proposed project may affect, but is not likely to adversely affect, the manatee.

## **BIOLOGICAL OPINION**

### **DESCRIPTION OF THE PROPOSED ACTION**

The Corps proposes to conduct routine hydraulic maintenance dredging of approximately 14.2

miles of the IWW, plus three settling basins, from cuts V-22 through V-40. The northern terminus of this work is in the vicinity of the IWW's confluence with Ten Mile Creek, while the southern terminus is within the northern portion of Mosquito Lagoon. Of the estimated 1.1 million cubic yards of dredged material generated, 300,000 cubic yards will be piped via an existing drainage canal to a new, 106.8-acre dredged material management area (V-26) located within an industrial park in Edgewater, Florida. The remaining material will all be piped via an upland route along Sapphire Road and through Bark Park in New Smyrna Beach and across the beach, to a 12,000-foot by 2,000-foot (551 acres) nearshore site within the Atlantic Ocean, located between the -12 and -32-foot depth contours and 3,250 feet south of Ponce de Leon Inlet. A third disposal option is to temporarily store about 200,000 cubic yards of beach quality spoil within a 300-foot long area along Bark Park outside of the county's designated Conservation Zone (CZ). This material would be used to create sand dunes on private property within the upper beach of the CZ from New Smyrna Beach Park south to 27<sup>th</sup> Avenue. It is anticipated that trucks and heavy equipment would be involved in the loading and unloading of this material at predetermined places. Following the unloading, environmental factors, primarily the wind, will be allowed to naturally sculpt the material into a the standard primary dune.

As part of the proposed dredging operations, the Corps in the PEA stated that it will include the standard manatee construction conditions and large vessel mooring bumpers, within the project plans and specifications. The nearshore placement and any stockpiling of beach quality material on the beach could occur at any time of the year, while the loading and unloading of material at the stockpile area and potential dune creation sites, respectively, would only occur outside of the loggerhead sea turtle nesting and hatching seasons, December 1 through April 14 (Paul Stodola, U.S. Army Corps of Engineers, pers. comm. 2003).

The Corps did not provide a description of the action area. In this opinion, the Service has described the action area to include the portion of the upper and lower beach between Mean Low Water and the waterward end of upland habitat, where the Corp intends to place the pipeline conveying the spoil material to the nearshore environment, as well as for temporary storage on the beach. It also extends to those areas of potential dune creation where that creation will occur within the existing Conservation Zone and cover existing suitable turtle nesting habitat. The rationale for this action area will be explained and discussed in the "Effects of the Action" section of this consultation.

## STATUS OF THE SPECIES/CRITICAL HABITAT

### Species/critical habitat description

#### Loggerhead Sea Turtle

The loggerhead sea turtle (*Caretta caretta*), listed as a threatened species on July 28, 1978 (43 FR 32800), inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Loggerhead sea turtles nest within the continental U.S.

from Louisiana to Virginia. Major nesting concentrations in the U.S. are found on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida (Hopkins and Richardson 1984).

No critical habitat has been designated for the loggerhead sea turtle.

#### Green Sea Turtle

The green sea turtle (*Chelonia mydas*) was federally listed as a protected species on July 28, 1978 (43 FR 32800). Breeding populations of the green turtle in Florida and along the Pacific Coast of Mexico are listed as endangered; all other populations are listed as threatened. The green turtle has a worldwide distribution in tropical and subtropical waters. Major green turtle nesting colonies in the Atlantic occur on Ascension Island, Aves Island, Costa Rica, and Surinam. Within the U.S., green turtles nest in small numbers in the U.S. Virgin Islands and Puerto Rico, and in larger numbers along the east coast of Florida, particularly in Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991a). Nesting also has been documented along the Gulf coast of Florida on Santa Rosa Island (Okaloosa and Escambia Counties) and from Pinellas County through Collier County (Florida Fish and Wildlife Conservation Commission, unpublished data). Green turtles have been known to nest in Georgia, but only on rare occasions (Georgia Department of Natural Resources, unpublished data). The green turtle also nests sporadically in North Carolina and South Carolina (North Carolina Wildlife Resources Commission, unpublished data; South Carolina Department of Natural Resources, unpublished data). Unconfirmed nesting of green turtles in Alabama has also been reported (Bon Secour National Wildlife Refuge, unpublished data).

Critical habitat for the green sea turtle has been designated for the waters surrounding Culebra Island, Puerto Rico, and its outlying keys.

#### Leatherback Sea Turtle

The leatherback sea turtle (*Dermochelys coriacea*), listed as an endangered species on June 2, 1970 (35 FR 8491), nests on shores of the Atlantic, Pacific and Indian Oceans. Non-breeding animals have been recorded as far north as the British Isles and the Maritime Provinces of Canada and as far south as Argentina and the Cape of Good Hope (Pritchard 1992). Nesting grounds are distributed worldwide, with the Pacific Coast of Mexico supporting the world's largest known concentration of nesting leatherbacks. The largest nesting colony in the wider Caribbean region is found in French Guiana, but nesting occurs frequently, although in lesser numbers, from Costa Rica to Columbia and in Guyana, Surinam, and Trinidad (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1992, National Research Council 1990a).

The leatherback regularly nests in the U.S. in Puerto Rico, the U.S. Virgin Islands, and along the Atlantic coast of Florida as far north as Georgia (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1992). Leatherback turtles have been known to nest in Georgia, South

Carolina, and North Carolina, but only on rare occasions (Murphy 1996, Winn 1996, Boettcher 1998). Leatherback nesting also has been reported on the northwest coast of Florida (LeBuff 1990; Florida Fish and Wildlife Conservation Commission, unpublished data); a false crawl (non-nesting emergence) has been observed on Sanibel Island (LeBuff 1990).

Marine and terrestrial critical habitat for the leatherback sea turtle has been designated at Sandy Point on the western end of the island of St. Croix, U.S. Virgin Islands.

### Hawksbill Sea Turtle

The hawksbill sea turtle (*Eretmochelys imbricata*) was listed as an endangered species on June 2, 1970 (35 FR 8491). The hawksbill is found in tropical and subtropical seas of the Atlantic, Pacific, and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean. Within the continental U.S., hawksbill sea turtle nesting is rare and is restricted to the southeastern coast of Florida (Volusia through Dade Counties) and the Florida Keys (Monroe County) (Meylan 1992, Meylan *et al.* 1995). However, hawksbill tracks are difficult to differentiate from those of loggerheads and may not be recognized by surveyors. Therefore, surveys in Florida likely underestimate actual hawksbill nesting numbers (Meylan *et al.* 1995). In the U.S. Caribbean, hawksbill nesting occurs on beaches throughout Puerto Rico and the U.S. Virgin Islands (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1993).

Critical habitat for the hawksbill sea turtle has been designated for selected beaches and/or waters of Mona, Monito, Culebrita, and Culebra Islands, Puerto Rico.

### Life history

#### Loggerhead Sea Turtle

Loggerheads are known to nest from one to seven times within a nesting season (Talbert *et al.* 1980, Richardson and Richardson 1982, Lenarz *et al.* 1981, among others); the mean is approximately 4.1 (Murphy and Hopkins 1984). The interval between nesting events within a season varies around a mean of about 14 days (Dodd 1988). Mean clutch size varies from about 100 to 126 along the southeastern United States coast (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). Nesting migration intervals of 2 to 3 years are most common in loggerheads, but the number can vary from 1 to 7 years (Dodd 1988). Age at sexual maturity is believed to be about 20 to 30 years (Turtle Expert Working Group 1998).

#### Green Sea Turtle

Green turtles deposit from one to nine clutches within a nesting season, but the overall average is about 3.3. The interval between nesting events within a season varies around a mean of about 13 days (Hirth 1997). Mean clutch size varies widely among populations. Average clutch size reported for Florida was 136 eggs in 130 clutches (Witherington and Ehrhart 1989). Only occasionally do females produce clutches in successive years. Usually 2, 3, 4, or more years

intervene between breeding seasons (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991a). Age at sexual maturity is believed to be 20 to 50 years (Hirth 1997).

#### Leatherback Sea Turtle

Leatherbacks nest an average of five to seven times within a nesting season, with an observed maximum of 11 (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1992). The interval between nesting events within a season is about 9 to 10 days. Clutch size averages 101 eggs on Hutchinson Island, Florida (Martin 1992). Nesting migration intervals of 2 to 3 years were observed in leatherbacks nesting on the Sandy Point National Wildlife Refuge, St. Croix, U.S. Virgin Islands (McDonald and Dutton 1996). Leatherbacks are believed to reach sexual maturity in 6 to 10 years (Zug and Parham 1996).

#### Hawksbill Sea Turtle

Hawksbills nest on average about 4.5 times per season at intervals of approximately 14 days (Corliss *et al.* 1989). In Florida and the U.S. Caribbean, clutch size is approximately 140 eggs, although several records exist of over 200 eggs per nest (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1993). On the basis of limited information, nesting migration intervals of 2 to 3 years appear to predominate. Hawksbills are recruited into the reef environment at about 14 inches in length and are believed to begin breeding about 30 years later. However, the time required to reach 14 inches in length is unknown and growth rates vary geographically. As a result, actual age at sexual maturity is not known.

#### Population dynamics

#### Loggerhead Sea Turtle

Total estimated nesting in the Southeast is approximately 50,000 to 70,000 nests per year (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). In 1998, there were over 80,000 nests in Florida alone. From a global perspective, the southeastern U.S. nesting aggregation is of paramount importance to the survival of the species and is second in size only to that which nests on islands in the Arabian Sea off Oman (Ross 1982, Ehrhart 1989, National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). The status of the Oman colony has not been evaluated recently, but its location in a part of the world that is vulnerable to disruptive events (e.g., political upheavals, wars, catastrophic oil spills) is cause for considerable concern (Meylan *et al.* 1995). The loggerhead nesting aggregations in Oman, the southeastern U.S., and Australia account for about 88 percent of nesting worldwide (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). About 80 percent of loggerhead nesting in the southeastern U.S. occurs in six Florida counties (Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties) (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b).

#### Green Sea Turtle



About 200 to 1,100 females are estimated to nest on beaches in the continental U.S. In the U.S. Pacific, over 90 percent of nesting throughout the Hawaiian archipelago occurs at the French Frigate Shoals, where about 200 to 700 females nest each year. Elsewhere in the U.S. Pacific, nesting takes place at scattered locations in the Commonwealth of the Northern Marianas, Guam, and American Samoa. In the western Pacific, the largest green turtle nesting aggregation in the world occurs on Raine Island, Australia, where thousands of females nest nightly in an average nesting season. In the Indian Ocean, major nesting beaches occur in Oman where 6,000 to 20,000 females are reported to nest annually.

### Leatherback Sea Turtle

Recent estimates of global nesting populations indicate 26,000 to 43,000 nesting females annually (Spotila *et al.* 1996). The largest nesting populations at present occur in the western Atlantic in French Guiana (4,500 to 7,500 females nesting/year) and Colombia (estimated several thousand nests annually), and in the western Pacific in West Papua (formerly Irian Jaya) and Indonesia (about 600 to 650 females nesting/year). In the United States, small nesting populations occur on the Florida east coast (35 females/year), Sandy Point, U.S. Virgin Islands (50 to 100 females/year), and Puerto Rico (30 to 90 females/year).

### Hawksbill Sea Turtle

About 15,000 females are estimated to nest each year throughout the world with the Caribbean accounting for 20 to 30 percent of the world's hawksbill population. Only five regional populations remain with more than 1,000 females nesting annually (Seychelles, Mexico, Indonesia, and two in Australia). Mexico is now the most important region for hawksbills in the Caribbean with 3,000 to 4,500 nests/year. Other significant but smaller populations in the Caribbean still occur in Martinique, Jamaica, Guatemala, Nicaragua, Grenada, Dominican Republic, Turks and Caicos Islands, Cuba, Puerto Rico, and U.S. Virgin Islands. In the U.S. Caribbean, about 100 to 350 nests/year are laid on Mona Island, Puerto Rico, and 60 to 120 nests/year on Buck Island Reef National Monument, U.S. Virgin Islands. In the U.S. Pacific, hawksbills nest only on main island beaches in Hawaii, primarily along the east coast of the island of Hawaii. Hawksbill nesting has also been documented in American Samoa and Guam.

### Status and distribution

#### Loggerhead Sea Turtle

Genetic research involving analysis of mitochondrial DNA has identified five different loggerhead subpopulations/nesting aggregations in the western North Atlantic: (1) the Northern Subpopulation occurring from North Carolina to around Cape Canaveral, Florida (about 29° N.); (2) South Florida Subpopulation occurring from about 29° N. on Florida's east coast to Sarasota on Florida's west coast; (3) Dry Tortugas, Florida, Subpopulation, (4) Northwest Florida Subpopulation occurring at Eglin Air Force Base and the beaches near Panama City; and (5) Yucatán Subpopulation occurring on the eastern Yucatán Peninsula, Mexico (Bowen 1994,

1995; Bowen *et al.* 1993; Encalada *et al.* 1998; Pearce 2001). These data indicate that gene flow between these five regions is very low. If nesting females are extirpated from one of these regions, regional dispersal will not be sufficient to replenish the depleted nesting subpopulation. The Northern Subpopulation has declined substantially since the early 1970s, but most of that decline occurred prior to 1979. No significant trend has been detected in recent years (Turtle Expert Working Group 1998, 2000). Adult loggerheads of the South Florida Subpopulation have shown significant increases over the last 25 years, indicating that the population is recovering, although a trend could not be detected from the State of Florida's Index Nesting Beach Survey program from 1989 to 1998. Nesting surveys in the Dry Tortugas, Northwest Florida, and Yucatán Subpopulations have been too irregular to date to allow for a meaningful trend analysis (Turtle Expert Working Group 1998, 2000).

Threats include incidental take from channel dredging and commercial trawling, longline, and gill net fisheries; loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and disease. There is particular concern about the extensive incidental take of juvenile loggerheads in the eastern Atlantic by longline fishing vessels from several countries.

### Green Sea Turtle

Total population estimates for the green turtle are unavailable, and trends based on nesting data are difficult to assess because of large annual fluctuations in numbers of nesting females. For instance, in Florida, where the majority of green turtle nesting in the southeastern U.S. occurs, estimates range from 200 to 1,100 females nesting annually. Populations in Surinam, and Tortuguero, Costa Rica, may be stable, but there is insufficient data for other areas to confirm a trend.

A major factor contributing to the green turtle's decline worldwide is commercial harvest for eggs and food. Fibropapillomatosis, a disease of sea turtles characterized by the development of multiple tumors on the skin and internal organs, is also a mortality factor and has seriously impacted green turtle populations in Florida, Hawaii, and other parts of the world. The tumors interfere with swimming, eating, breathing, vision, and reproduction, and turtles with heavy tumor burdens may die. Other threats include loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and incidental take from channel dredging and commercial fishing operations.

### Leatherback Sea Turtle

Declines in leatherback nesting have occurred over the last two decades along the Pacific coasts of Mexico and Costa Rica. The Mexican leatherback nesting population, once considered to be the world's largest leatherback nesting population (65 percent of worldwide population), is now

less than one percent of its estimated size in 1980. Spotila *et al.* (1996) recently estimated the number of leatherback sea turtles nesting on 28 beaches throughout the world from the literature and from communications with investigators studying those beaches. The estimated worldwide population of leatherbacks in 1995 was about 34,500 females on these beaches with a lower limit of about 26,200 and an upper limit of about 42,900. This is less than one third the 1980 estimate of 115,000. Leatherbacks are rare in the Indian Ocean and in very low numbers in the western Pacific Ocean. The largest population is in the western Atlantic. Using an age-based demographic model, Spotila *et al.* (1996) determined that leatherback populations in the Indian Ocean and western Pacific Ocean cannot withstand even moderate levels of adult mortality and that even the Atlantic populations are being exploited at a rate that cannot be sustained. They concluded that leatherbacks are on the road to extinction and further population declines can be expected unless we take action to reduce adult mortality and increase survival of eggs and hatchlings.

The crash of the Pacific leatherback population is believed primarily to be the result of exploitation by humans for the eggs and meat, as well as incidental take in numerous commercial fisheries of the Pacific. Other factors threatening leatherbacks globally include loss or degradation of nesting habitat from coastal development; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; and watercraft strikes.

#### Hawksbill Sea Turtle

The hawksbill sea turtle has experienced global population declines of 80 percent or more during the past century and continued declines are projected (Meylan and Donnelly 1999). Most populations are declining, depleted, or remnants of larger aggregations. Hawksbills were previously abundant, as evidenced by high-density nesting at a few remaining sites and by trade statistics. The decline of this species is primarily due to human exploitation for tortoiseshell. While the legal hawksbill shell trade ended when Japan agreed to stop importing shell in 1993, a significant illegal trade continues. It is believed that individual hawksbill populations around the world will continue to disappear under the current regime of exploitation for eggs, meat, and tortoiseshell, loss of nesting and foraging habitat, incidental capture in fishing gear, ingestion of and entanglement in marine debris, oil pollution, and boat collisions. Hawksbills are closely associated with coral reefs, one of the most endangered of all marine ecosystem types.

#### Analysis of the species/critical habitat likely to be affected

The proposed action has the potential to adversely affect nesting females and nests within the proposed project area. The effects of the proposed action on sea turtles will be considered further in the remaining sections of this biological opinion. Potential effects include destruction of nests deposited within the boundaries of the proposed project, and harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities.

Critical habitat has not been designated in the continental United States; therefore, the proposed action would not result in an adverse modification.

## ENVIRONMENTAL BASELINE

### Status of the species within the action area

#### Loggerhead Sea Turtle

The loggerhead sea turtle nesting and hatching season for the Northern Florida Atlantic Beaches extends from April 15 through November 30. Incubation ranges from about 45 to 95 days. Index beach nesting data from Volusia County beaches, excluding North Peninsula State Recreation Area and Canaveral National Seashore, from 1988 to 1994 show an annual average of about 81 loggerhead nests. This average includes turtles nests within the action area.

#### Green Sea Turtle

The green sea turtle nesting and hatching season for the Northern Florida Atlantic Beaches extends from May 15 through November 15. Incubation ranges from about 45 to 75 days. Index beach nesting data from Volusia County beaches, excluding North Peninsula State Recreation Area and Canaveral National Seashore, from 1988 to 1994 show an annual average of about 2 green sea turtle nests. None of that nesting occurred within the action area.

#### Leatherback Sea Turtle

The leatherback sea turtle nesting and hatching season for the Northern Florida Atlantic Beaches extends from April 15 through September 30. Incubation ranges from about 55 to 75 days. Index beach nesting data from Volusia County beaches, excluding North Peninsula State Recreation Area and Canaveral National Seashore, from 1988 to 1994 show an annual average of about 0.75 leatherback sea turtle nests. None of that nesting occurred within the action area.

#### Hawksbill Sea Turtle

The hawksbill sea turtle nesting and hatching season for the Northern Florida Atlantic Beaches extends from June 1 through December 31. Incubation lasts about 60 days. Index beach nesting data from Volusia County beaches, excluding North Peninsula State Recreation Area and Canaveral National Seashore, from 1988 to 1994 show that there have been no hawksbill nests recorded in this area, although two Kemp's ridley sea turtle nests (*Lepidochelys kempii*) were recorded in 1996. None of that nesting occurred within the action area. Because the nesting of those two species on Volusia County beaches are considered extremely rare, the probabilities of either of those species nesting within the limited action area is considered to be insignificant.

### Factors affecting the species environment within the action area

The Volusia County Coastal Habitat Management Plan establishes Conservation Zones (CZ) along large portions of the Atlantic Ocean beachfront. Where present, these zones differ in width and usually extend waterward from the toe end of existing dunes or adjacent uplands. The zones within the action area are 30-feet wide. No parking or other human disturbance is generally allowed within this area. There are designated and speed-controlled vehicle driving areas waterward of the CZ within the action area. Concessionaires are also allowed on the beach in designated areas. Special beach events, either permitted by the County and/or United States Coast Guard, if the event involves marine waters, may also occur within the action area. Beach renourishment has occurred in the action area in the past. The proposed extension of the south jetty at Ponce de Leon inlet is expected to increase the natural sand deposition along the existing beach for approximately one mile south of the inlet, and just north of the action area. The proposed nearshore deposition of spoil is expected to enhance beaches contiguous with the action area as well as south of the area by adding sand to the longshore transport system, and providing a buffer from current wave energy impinging upon the contiguous beach and the adjacent beach immediately south of the placement site.

## EFFECTS OF THE ACTION

### Factors to be considered

The proposed deposition of sand in the nearshore marine environment may occur during any time of the year. Potential impacts to gravid female sea turtles in that environment is within the jurisdiction of the National Oceanic and Atmospheric Administration - Fisheries. The stockpiling of dredged material on the beach at any time during the nesting season may impact nesting females and nests. Nesting can be considered to include: emerging from the water and approaching the beach to nest, selecting a nest site, constructing a nest, egg deposition, covering and camouflaging the nest, and returning to the water after nesting. The presence of a pipeline on the beach perpendicular to the beach, as would occur during nearshore deposition, would not be expected to have any significant affect on nesting turtles. A pipeline parallel to the beach, and the stockpiling of beach quality material along a 300-foot parallel section of beach, would be expected to impact female turtles coming ashore to nest, as well as potentially destroy any existing nests, or prevent hatchlings from reaching the sand surface, in those areas where the sand pile and/or pipeline is placed over unmarked nests. The transportation of stockpiled sand and dune creation will occur during the non-nesting season. However, the area covered by the created dunes may include some portion of upper beach that would otherwise be available to nesting sea turtles.

### Analyses for effects of the action

#### Beneficial Effects

The nearshore placement of beach-quality dredged spoil could benefit sea turtles by increasing

the potential for natural sand deposition at a rate that would allow for the development and maintenance of beaches in areas where there is a current net loss of sand. The creation of dunes may locally reduce or eliminate adverse artificial lighting impacts to both adult and hatchling sea turtles.

## Direct Effects

Direct effects are those direct or immediate effects of a project on the species or its habitat. Stocking sand on the beach during the turtle nesting season particularly on or near high density nesting beaches, may have negative impacts to sea turtles, can cause increased loss of eggs and hatchlings and, along with other mortality sources, may significantly impact the long-term survival of the species. For instance, projects conducted during the nesting and hatching season could result in the loss of sea turtles through disruption of adult nesting activity and by burial or crushing of nests or hatchlings. While a nest monitoring and egg relocation program would reduce these impacts, nests may be inadvertently missed (when crawls are obscured by rainfall, wind, and/or tides) or misidentified as false crawls during daily patrols. In addition, nests may be destroyed by operations at night prior to beach patrols being performed. Even under the best of conditions, about 7 percent of the nests can be misidentified as false crawls by experienced sea turtle nest surveyors (Schroeder 1994).

### 1. Nest relocation

Besides the potential for missing nests during a nest relocation program, there is a potential for eggs to be damaged by their movement, particularly if eggs are not relocated within 12 hours of deposition (Limpus *et al.* 1979). Nest relocation can have adverse impacts on incubation temperature (and hence sex ratios), gas exchange parameters, hydric environment of nests, hatching success, and hatchling emergence (Limpus *et al.* 1979, Ackerman 1980, Parmenter 1980, Spotila *et al.* 1983, McGehee 1990). Relocating nests into sands deficient in oxygen or moisture can result in mortality, morbidity, and reduced behavioral competence of hatchlings. Water availability is known to influence the incubation environment of the embryos and hatchlings of turtles with flexible-shelled eggs, which has been shown to affect nitrogen excretion (Packard *et al.* 1984), mobilization of calcium (Packard and Packard 1986), mobilization of yolk nutrients (Packard *et al.* 1985), hatchling size (Packard *et al.* 1981, McGehee 1990), energy reserves in the yolk at hatching (Packard *et al.* 1988), and locomotory ability of hatchlings (Miller *et al.* 1987).

Comparisons of hatching success between relocated and *in situ* nests have noted significant variation ranging from a 21 percent decrease to a 9 percent increase for relocated nests (Florida Fish and Wildlife Conservation Commission, unpublished data). Comparisons of emergence success between relocated and *in situ* nests have also noted significant variation ranging from a 23 percent decrease to a 5 percent increase for relocated nests (Florida Fish and Wildlife Conservation Commission, unpublished data). A 1994 study of hatching and emergence success of *in situ* and relocated nests at seven sites in Florida found that hatching success was lower for relocated nests in five of seven cases with an average decrease for all seven sites of 5.01 percent (range = 7.19 percent increase to 16.31 percent decrease). Emergence success was lower for

relocated nests in all seven cases by an average of 11.67 percent (range 3.6 to 23.36 percent) (Meylan 1995).

## 2. Equipment

The placement of pipelines and the use of heavy machinery on the beach during a construction project may also have adverse effects on sea turtles. They can create barriers to nesting females emerging from the surf and crawling up the beach, causing a higher incidence of false crawls and unnecessary energy expenditure.

## 3. Artificial lighting

Visual cues are the primary sea-finding mechanism for hatchling sea turtles (Mrosovsky and Carr 1967, Mrosovsky and Shettleworth 1968, Dickerson and Nelson 1989, Witherington and Bjorndal 1991). When artificial lighting is present on or near the beach, it can misdirect hatchlings once they emerge from their nests and prevent them from reaching the ocean (Philibosian 1976; Mann 1977; Florida Fish and Wildlife Conservation Commission, unpublished data). In addition, a significant reduction in sea turtle nesting activity has been documented on beaches illuminated with artificial lights (Witherington 1992). Therefore, construction lights along a project beach and on the dredging vessel may deter females from coming ashore to nest, misdirect females trying to return to the surf after a nesting event, and misdirect emergent hatchlings from adjacent non-project beaches. Any source of bright lighting can profoundly affect the orientation of hatchlings, both during the crawl from the beach to the ocean and once they begin swimming offshore. Hatchlings attracted to light sources on dredging barges may not only suffer from interference in migration, but may also experience higher probabilities of predation to predatory fishes that are also attracted to the barge lights. This impact could be reduced by using the minimum amount of light necessary (may require shielding) or low pressure sodium lighting during project construction.

## Indirect Effects

[Indirect effects are those effects that are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Many of the direct effects of beach nourishment may persist over time and become indirect impacts. For the proposed project, these indirect effects include increased susceptibility of relocated nests to catastrophic events, changes in the physical characteristics of the beach, the formation of escarpments, and future sand migration.

### 1. Increased susceptibility to catastrophic events

Nest relocation may concentrate eggs in an area making them more susceptible to catastrophic events. Hatchlings released from concentrated areas also may be subject to greater predation rates from both land and marine predators, because the predators learn where to concentrate their efforts (Glenn 1998, Wyneken *et al.* 1998).

### 2. Changes in the physical environment

Stockpiling sand on a beach may result in changes in sand density (compaction), beach shear

resistance (hardness), beach moisture content, beach slope, sand color, sand grain size, sand grain shape, and sand grain mineral content if the placed sand is dissimilar from the original beach sand (Nelson and Dickerson 1988a). These changes could result in adverse impacts on nest site selection, digging behavior, clutch viability, and emergence by hatchlings (Nelson and Dickerson 1987, Nelson 1988). The creation of dunes within the conservation zone during the non-nesting season may reduce the amount of available turtle nesting habitat during the nesting season.

Beach compaction and unnatural beach profiles that may result from beach stockpiling activities could negatively impact sea turtles regardless of the timing of projects. Very fine sand and/or the use of heavy machinery can cause sand compaction on nourished beaches (Nelson *et al.* 1987, Nelson and Dickerson 1988a). Significant reductions in nesting success (i.e., false crawls occurred more frequently) have been documented on severely compacted nourished beaches (Fletemeyer 1980, Raymond 1984, Nelson and Dickerson 1987, Nelson *et al.* 1987), and increased false crawls may result in increased physiological stress to nesting females. Sand compaction may increase the length of time required for female sea turtles to excavate nests and also cause increased physiological stress to the animals (Nelson and Dickerson 1988c). Nelson and Dickerson (1988b) concluded that, in general, beaches nourished from offshore borrow sites are harder than natural beaches, and while some may soften over time through erosion and accretion of sand, others may remain hard for 10 years or more.

These impacts can be minimized by using suitable sand and by tilling compacted sand after project completion. The level of compaction of a beach can be assessed by measuring sand compaction using a cone penetrometer (Nelson 1987). Tilling of a nourished beach with a root rake may reduce the sand compaction to levels comparable to unnourished beaches. However, a pilot study by Nelson and Dickerson (1988c) showed that a tilled nourished beach will remain uncompacted for up to 1 year. Therefore, the Service requires multi-year beach compaction monitoring and, if necessary, tilling to ensure that project impacts on sea turtles are minimized.

A change in sediment color on a beach could change the natural incubation temperatures of nests in an area, which, in turn, could alter natural sex ratios. To provide the most suitable sediment for nesting sea turtles, the color of the stockpiled sediments must resemble the natural beach sand in the area. Natural reworking of sediments and bleaching from exposure to the sun would help to lighten dark stockpiled sediments; however, the timeframe for sediment mixing and bleaching to occur could be critical to a successful sea turtle nesting season.

#### 4. Escarpment formation

On nourished beaches, steep escarpments may develop along their water line interface as they adjust from an unnatural construction profile to a more natural beach profile (Coastal Engineering Research Center 1984, Nelson *et al.* 1987). These escarpments can hamper or prevent access to nesting sites (Nelson and Blihovde 1998). Researchers have shown that female turtles coming ashore to nest can be discouraged by the formation of an escarpment, leading to situations where they choose marginal or unsuitable nesting areas to deposit eggs (e.g., in front of the escarpments, which often results in failure of nests due to prolonged tidal inundation).



This impact can be minimized by leveling any escarpments prior to the nesting season.

#### Species' response to a proposed action

Ernest and Martin (1999) conducted a comprehensive study to assess the effects of beach nourishment on loggerhead sea turtle nesting and reproductive success. The following findings illustrate sea turtle responses to and recovery from a nourishment project. A significantly larger proportion of turtles emerging on nourished beaches abandoned their nesting attempts than turtles emerging on Control or pre-nourished beaches. This reduction in nesting success was most pronounced during the first year following project construction and is most likely the result of changes in physical beach characteristics associated with the nourishment project (e.g., beach profile, sediment grain size, beach compaction, frequency and extent of escarpments). During the first post-construction year, the time required for turtles to excavate an egg chamber on the untilled, hard-packed sands of one treatment area increased significantly relative to Control and background conditions. However, in another treatment area, tilling was effective in reducing sediment compaction to levels that did not significantly prolong digging times. As natural processes reduced compaction levels on nourished beaches during the second post-construction year, digging times returned to background levels.

During the first post-construction year, nests on the nourished beaches were deposited significantly farther from both the toe of the dune and the tide line than nests on Control beaches. Furthermore, nests were distributed throughout all available habitat and were not clustered near the dune as they were in the Control. As the width of nourished beaches decreased during the second year, among-treatment differences in nest placement diminished. More nests were washed out on the wide, flat beaches of the nourished treatments than on the narrower steeply sloped beaches of the Control. This phenomenon persisted through the second post-construction year monitoring and resulted from the placement of nests near the seaward edge of the beach berm where dramatic profile changes, caused by erosion and scarping, occurred as the beach equilibrated to a more natural contour.

As with other beach nourishment projects, Ernest and Martin (1999) found that the principal effect of nourishment on sea turtle reproduction was a reduction in nesting success during the first year following project construction. Although most studies have attributed this phenomenon to an increase in beach compaction and escarpment formation, Ernest and Martin indicate that changes in beach profile may be more important. Regardless, as a nourished beach is reworked by natural processes in subsequent years and adjusts from an unnatural construction profile to a more natural beach profile, beach compaction and the frequency of escarpment formation decline, and nesting and nesting success return to levels found on natural beaches. The effects of stockpiling is expected to mimic that of beach nourishment, though on a much smaller scale.

#### CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are

reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any cumulative effects in the project area.

## CONCLUSION

After reviewing the current status of the loggerhead, green, and leatherback sea turtles, the environmental baseline for the action area, and the effects of the proposed sand stockpiling and dune creation, it is the Service's biological opinion that the proposed maintenance dredging of the ICW, and the proposed alternatives for spoil disposal within the upper beach and nearshore marine environment is not likely to destroy or adversely modify designated critical habitat. No critical habitat has been designated for the green and loggerhead sea turtles in the continental United States; therefore, none will be affected.

The proposed project will affect a fraction of the beach and nearshore marine environment within Volusia County. The Corps has agreed to limit sand transportation to the proposed dune construction sites, and the construction of those dunes, to the non-nesting season. This activity is expected to have very limited indirect effects, and no known cumulative effects within the action area. The proposed disposal alternatives have the potential to benefit sea turtles by reducing artificial lighting impacts to nesting and hatchling sea turtles, and stabilizing some beaches that are currently experiencing net sand losses. We also believe that other measures can be implemented to further minimize impacts to nesting sea turtles and their nests from these effects.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered or threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the Corps Guard so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps continuing duty to regulate

the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

## AMOUNT OR EXTENT OF TAKE

The Service anticipates approximately one-half mile of nesting beach habitat could be taken as a result of this proposed action. The take is expected to be in the form of: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and egg relocation program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and egg relocation program is not required to be in place within the boundaries of the proposed project; (3) reduced hatching success due to egg mortality during relocation and adverse conditions at the relocation site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities.

Incidental take is anticipated for only the one-half mile of beach that has been identified within the action area. The Service anticipates incidental take of sea turtles will be difficult to detect for the following reasons: (1) the turtles nest primarily at night and all nests are not found because [a] natural factors, such as rainfall, wind, and tides may obscure crawls and [b] human-caused factors, such as pedestrian and vehicular traffic, may obscure crawls, and result in nests being destroyed because they were missed during a nesting survey and egg relocation program; (2) the total number of hatchlings per undiscovered nest is unknown; (3) the reduction in percent hatching and emerging success per relocated nest over the natural nest site is unknown; (4) an unknown number of females may avoid the project beach and be forced to nest in a less than optimal area; (5) lights may misdirect an unknown number of hatchlings and cause death; and (6) escarpments may form and cause an unknown number of females from accessing a suitable nesting site. However, the level of take of these species can be anticipated by the sand stockpiling and dune creation because: (1) turtles nest within the project site; (2) sand stockpiling on the beach will likely occur during a portion of the nesting season; (3) the sand stockpiling will modify the incubation substrate, beach slope, and sand compaction; and (4) artificial lighting will deter and/or misdirect nesting females.

## EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. Critical habitat has not been designated in the project area; therefore, the project will not result in destruction or adverse modification of critical habitat.

## REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of green and loggerhead sea turtles.

1. Beach quality sand suitable for sea turtle nesting, successful incubation, and hatchling emergence must be used on the project site.
2. If sand stockpiling will be conducted during the sea turtle nesting season, surveys for nesting sea turtles must be conducted. If nests are constructed in the area of sand stockpiling, the eggs must be relocated.
3. Immediately after removal of all stockpiled sand or dune creation, beach compaction must be monitored and tilling must be conducted as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.
4. Immediately after removal of all stockpiled sand, monitoring must be conducted to determine if escarpments are present and escarpments must be leveled as required to reduce the likelihood of impacting sea turtle nesting activities.
5. The applicant must ensure that contractors doing the stockpiling work fully understand the sea turtle protection measures detailed in this incidental take statement.
6. During the sea turtle nesting season, construction equipment and pipes must be stored in a manner that will minimize impacts to sea turtles to the maximum extent practicable.
7. During the sea turtle nesting season, lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles.

## TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the U.S. Coast Guard must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. All stockpiled material placed must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior renourishment activities. The fill material must be similar in both coloration and grain size distribution to the native beach. All such fill material must be free of construction debris, rocks, or other foreign matter and must not contain, on average, greater than 10 percent fines (i.e., silt and clay) (passing the #200 sieve) and must not contain, on average, greater than 5 percent coarse gravel or cobbles, exclusive of shell material (retained by the #4 sieve).

2. Daily early morning surveys for sea turtle nests will be required if any portion of the beach nourishment project occurs during the period April 15 through November 30. Nesting surveys must be initiated 65 days prior to nourishment activities or by April 15, whichever is later. Nesting surveys must continue through the end of the project or through September 30, whichever is earlier. If nests are constructed in areas where they may be affected by construction activities, eggs must be relocated per the following requirements

2a. Nesting surveys and egg relocations will only be conducted by personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must have a valid Florida Fish and Wildlife Conservation Commission permit. Nesting surveys must be conducted daily between sunrise and 9 a.m. Surveys must be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures.

2b. Only those nests that may be affected by construction activities will be relocated. Nests requiring relocation must be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Nest relocations in association with construction activities must cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 65 days must be marked and left in place unless other factors threaten the success of the nest. Any nests left in the active construction zone must be clearly marked, and all mechanical equipment must avoid nests by at least 10 feet.

3. Immediately after complete removal of the stockpiled sand, sand compaction must be monitored in the area of restoration in accordance with a protocol agreed to by the Service, the State regulatory agency, and the applicant. At a minimum, the protocol provided under 3a and 3b below must be followed. If required, the area must be tilled to a depth of 36 inches. All tilling activity must be completed prior to April 15. If the project is completed during the nesting season, tilling will not be performed in areas where nests have been left in place or relocated. An annual summary of compaction surveys and the actions taken must be submitted to the Service. (NOTE: The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels).

3a. Compaction sampling stations must be located at 50-foot intervals along the project area. One station must be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station must be midway between the dune line and the high water line (normal wrack line).

At each station, the cone penetrometer will be pushed to a depth of 6, 12, and 18

inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lay over less compact layers. Replicates will be located as close to each other as possible, without interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth will be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final 6 averaged compaction values.

3b. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area must be tilled immediately prior to April 15. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the Fish and Wildlife Service will be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

4. Visual surveys for escarpments along the project area must be made immediately after completion of the beach sand stockpiling and prior to April 15. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet must be leveled to the natural beach contour by April 15. If the project is completed during the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. The Service must be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service will provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. A summary of escarpment surveys and actions taken must be submitted to the Service.

5. The applicant must arrange a meeting between representatives of the contractor, the Service, the Florida Fish and Wildlife Conservation Commission, and the permitted person responsible for egg relocation at least 30 days prior to the commencement of work on this project. At least 10 days advance notice must be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle protection measures.

6. From April 15 through November 30, staging areas for construction equipment must be located off the beach to the maximum extent practicable. Nighttime storage of construction equipment not in use must be off the beach to minimize disturbance to sea turtle nesting and hatching activities. In addition, all construction pipes that are placed on the beach must be located as far landward as possible without compromising the

integrity of the existing or reconstructed dune system. Temporary storage of pipes must be off the beach to the maximum extent possible. Temporary storage of pipes on the beach must be in such a manner so as to impact the least amount of nesting habitat and must likewise not compromise the integrity of the dune systems (placement of pipes perpendicular to the shoreline is recommended as the method of storage).

7. From April 15 through November 30, direct lighting of the beach and near shore waters must be limited to the immediate construction area and must comply with safety requirements. Lighting on offshore or onshore equipment must be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the waters surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of lighting plants must be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields must be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area (see figure below).

8. A report describing the actions taken to implement the terms and conditions of this incidental take statement must be submitted to the Jacksonville Ecological Services Field Office within 60 days of completion of the proposed work for each year when the activity has occurred. This report will include the dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and locations of self-release beach sites, nest survey and relocation results, and hatching success of nests.

9. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project must be notified so the eggs can be moved to a suitable relocation site.

10. Upon locating a sea turtle adult, hatchling, or egg harmed or destroyed as a direct or indirect result of the project, notification must be made to the Florida Fish and Wildlife Conservation Commission at 850-922-4330 and the Jacksonville Ecological Services Field Office at 904-232-2580. Care should be taken in handling injured turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis.

The Service believes that incidental take will be limited to the one-half mile of stockpiled beach, and total upper beach within the CZ that have been identified for dune creation. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than the following types of incidental take will result from the proposed action: (1) destruction of all nests that may be constructed and eggs that may be deposited and missed by a nest survey and egg relocation program within the boundaries of the proposed project; (2) destruction of all nests deposited during the period when a nest survey and egg relocation program is not required to be in place within the boundaries of the proposed project;

(3) reduced hatching success due to egg mortality during relocation and adverse conditions at the relocation site; (4) harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities; (5) disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; and 6) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs. The amount or extent of incidental take for sea turtles will be considered exceeded if the project results in more than the 300 linear feet of stockpiled sand in the vicinity of Sapphire Road, or more than the amount of upper beach nesting habitat that may be lost as a result of the use of that one-time stockpiled sand to create dunes within the existing county conservation zone. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corp must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Appropriate native salt-resistant dune vegetation should be established on the restored dunes. The Florida Department of Environmental Protection, Bureau of Beaches and Wetland Resources, can provide technical assistance on the specifications for design and implementation.
2. Educational signs should be placed where appropriate at the dune creation sites explaining the importance of the dunes to sea turtles and/or the life history of sea turtle species that nest in the area.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

### REINITIATION - CLOSING STATEMENT

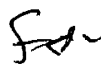
This concludes formal consultation on the action outlined in the March 18, 2003 request for initiation of formal consultation. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed



species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Sincerely,

A handwritten signature in black ink that reads "Don Palmer". The signature is written in a cursive, slightly slanted style.

 Peter M. Benjamin  
Assistant Field Supervisor

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**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office  
9721 Executive Center Drive North  
St. Petersburg, Florida 33702-2432

September 8, 2003

Mr. Paul Stodolo  
Construction-Operations Division  
Jacksonville District, Corps of Engineers  
P.O. Box 4970  
Jacksonville Florida 32232-0019

Dear Mr. Stodolo:

This responds to your e-mail reply to the National Marine Fisheries Service's (NOAA Fisheries) regarding Essential Fish Habitat (EFH) Conservation Recommendations that we provided by letter dated April 22, 2003. Your reply addresses several concerns that we raised concerning maintenance dredging of the Atlantic Intracoastal Waterway (AIWW) in the vicinity of Ponce de Leon Inlet, Volusia County, Florida.

NOAA Fisheries does not concur with your determination that the proposed maintenance dredging and placement of dredged material in nearshore marine waters would result in only minor harm to this habitat and associated fishery resources. Deposition of dredged material within shallow nearshore waters of the Atlantic Ocean is expected to increase turbidity and sedimentation and subsequently harm living marine resources by reducing dissolved oxygen in the water column, through burial of sessile or slow moving invertebrates, and through damaging fish gills and disrupting feeding, reproduction, and other requisite functions.

Although the stated project purpose to "dredge material that came from the littoral system and place it back in the littoral system, the upper beach, and DMMA V-26" is reasonable, other efforts to supplant the natural littoral process, such as more frequent or continuous sand bypassing, may be less damaging to fishery resources and should be further evaluated in connection with this and future work at the inlet.

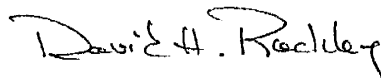
NOAA Fisheries commends the Jacksonville District for its decision to float and push pipelines through the mouth of the canal pipeline route as a means of avoiding damage to fringing mangroves. Planned replacement of mangroves that are inadvertently damaged is also commendable.



Your response fulfills the consultation procedures outlined in 50 CFR Section 600.920, the regulation to implement the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). However, and as previously mentioned, NOAA Fisheries continues to recommend a more pro-active and less damaging approach to controlling sedimentation within the inlet and the AIWW.

Should you have questions or wish to coordinate further on this project, please contact Mr. George Getsinger, at our Jacksonville Office. He may be reached at 6620 Southpoint Drive South, Suite 310, Jacksonville, Florida 32216-0958, or at (904) 232-2580 ext. 121.

Sincerely,



Miles M. Croom  
Assistant Regional Administrator  
Habitat Conservation Division

cc:

EPA, ATL

FWS, JAX

FDEP, JAX

FFWCC, TAL

F/SER4

F/SER43-Ruebsamen



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
9721 Executive Center Drive North  
St. Petersburg, FL 33702  
(727) 570-5312; Fax 570-5517  
<http://caldera.sero.nmfs.gov>

APR 23 2003

F/SER3:DK

Mr. James C. Duck  
Chief, Planning Division  
Jacksonville District Corps of Engineers  
Department of the Army  
P.O. Box 4970  
Jacksonville, FL 32232-0019

Dear Mr. Duck:

This correspondence is in reply to the March 18, 2003, letter and accompanying information from the U.S. Army Corps of Engineers (COE), Jacksonville District. The COE has requested section 7 consultation from the National Marine Fisheries Service (NOAA Fisheries), pursuant to the Endangered Species Act of 1973 (ESA). The project is the maintenance dredging of the Intracoastal Waterway (IWW) in the vicinity of Ponce de Leon Inlet, Volusia County, Florida. The NOAA Fisheries' consultation number for this project is I/SER/2003/00325; please refer to this number in future correspondence on this project.

The COE is proposing to conduct routine maintenance dredging of the IWW, including 3 settling basins, near Ponce de Leon Inlet. The dredging is necessary because shoaling has occurred along the IWW in that area and some commercial vessels are experiencing hazardous navigation situations as a result of the reduced depths. The dredging would return this section of the IWW (cuts V-22 through V-40) to the authorized dimensions of 125 feet wide and 12 feet deep, with 2 feet of allowable overdepth at mean lower low water. Approximately 800,000 cubic yards (cy) of sand would be removed and placed in the designated nearshore area south of Ponce de Leon Inlet, with up to 200,000 cy of this dredged material possibly being used to construct shore protection dunes along the south beach of the inlet. An additional 300,000 cy of sand would be placed in the Dredged Material Management Area in the City of Edgewater.

The proposed dredging will most likely be performed with the use of a cutter suction pipeline dredge according to the preliminary environmental assessment. This type of dredging is not known to take sea turtles. However, the exact method of dredging has not been determined. If a hopper dredge is used, the project would fall under the regional biological opinion (RBO) on hopper dredging by NOAA Fisheries (September 25, 1997, biological opinion to U.S. Army Corps of Engineers, South Atlantic Division, on the continued hopper dredging of channels and borrow areas in the southeastern United States). Any incidental take of sea turtles resulting from the operation of hopper dredges by the COE's South Atlantic Division is covered under the Incidental Take Statement (ITS) of that biological opinion, and such take would come off the total allowable take in that ITS. Year to date, four loggerheads have been taken under the ITS for the South Atlantic coast hopper dredging RBO.

ESA-listed species under the purview of NOAA Fisheries which potentially occur in the project area include the green (*Chelonia mydas*), loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempii*),



leatherback (*Dermochelys coriacea*), and hawksbill (*Eretmochelys imbricata*) sea turtles. A number of endangered large whale species are known to occur along the coast of Florida, but are not expected to occur in intracoastal waters. No critical habitat has been designated or proposed for listed species within the project area.

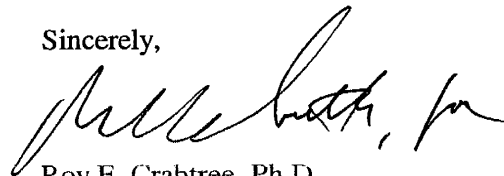
As stated above, cutter pipeline dredging is not known to take sea turtles, and hopper dredging would be covered under the hopper dredging RBO. The placement of dredged material onto the nearshore placement area south of the inlet would not have a direct impact on sea turtles, and would not have a substantial impact on sea turtle foraging habitat. Additionally, such placement may help reduce beach erosion which has limited sea turtle nesting possibilities in that area. Turbidity resulting from the dredging and the spoil placement would be temporary and minimal. NOAA Fisheries, therefore, believes that the proposed action is not likely to adversely affect any listed species under our purview.

This letter concludes the COE's consultation responsibilities under section 7 of the ESA for the proposed actions for federally-listed species, and their critical habitat, under NOAA Fisheries' purview. A new consultation should be initiated if there is a take, new information reveals impacts of the proposed actions that may affect listed species or their critical habitat, a new species is listed, the identified action is subsequently modified, or critical habitat is designated that may be affected by the proposed activity.

The action agency is also reminded that, in addition to its protected species/critical habitat consultation requirements with NOAA Fisheries' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NOAA Fisheries' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NOAA Fisheries letterhead from HCD regarding their concerns and/or finalizing EFH consultation. Consultation is not complete until EFH and ESA concerns have been addressed to NOAA Fisheries' satisfaction.

If you have any questions about EFH consultation for this project, please contact Mr. George Getsinger, HCD, at (904) 232-2580 x121. If you have any questions about this ESA consultation, please contact Dennis Klemm, fishery biologist, at the number above or by e-mail at [Dennis.Klemm@noaa.gov](mailto:Dennis.Klemm@noaa.gov).

Sincerely,



Roy E. Crabtree, Ph.D.  
Regional Administrator

cc: F/PR3  
F/SER45-G. Getsinger  
COE- SAD, Atlanta - Daniel Small

File: 1514 22 f.1 FL  
O:\section 7\informal\WW Dredging at Ponce de Leon Inlet.wpd



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
6620 Southpoint Drive, Suite 310  
Jacksonville, Florida 32216-0958  
Phone: (904) 232-2580 FAX: (904) 232-2404



In Reply Refer To:  
FWS/R4/ES-JAFL

REC'D *NO*

SEP 27 2003

FLORIDA INLAND  
NAVIGATION DISTRICT

September 25, 2003

Mr. David Roach  
Florida Inland Navigation District  
1314 Marcinski Road  
Jupiter, Florida 33477-9498

Dear David:

Reference is made to your request of September 23, 2003, to clarify the applicability of the Coastal Barrier Resources Act (CBRA) and the disposal of dredged material resulting from the maintenance of the Atlantic Intracoastal Waterway (IWW).

Maintenance dredging of the IWW is consistent with provisions of the CBRA which excepts "maintenance of existing channel improvements...and including the disposal of dredge materials related to such improvements". CBRA has no requirement to dispose of the material within the same CBRA Unit though disposal could be authorized. CBRA does not otherwise regulate how the maintenance material may be used and does not preclude beneficial uses of the material.

I hope this clarifies the issue. If you have any further questions, I would be happy to discuss them with you. I can be reached at 904/232-2580 (extension 108).

Sincerely,

David L. Hankla  
Field Supervisor

S:\hankla\cbra\toroach\9.25.03\tdf



FLORIDA DEPARTMENT OF STATE

Glenda E. Hood

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Mr. James C. Duck, Chief  
Jacksonville District, Corps of Engineers  
Planning Division, Environmental Branch  
P.O. Box 4970  
Jacksonville, Florida 32232-0019

May 2, 2003

RE: DHR Number: 2003-1562B / Additional Information Received: April 23, 2003  
Public Notice No: PN-CO-IWW-264  
Project: Maintenance Dredging IWW / V-26 Disposal Site  
Edgewater, Volusia County

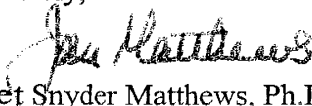
Dear Mr. Duck:

In our letter dated March 21, 2003, we recommended that a professional archaeologist perform a systematic archaeological and historical survey to assess whether cultural resources were present within the proposed project location for spoil material. This office received the additional information concerning the referenced property and the proposed project. Staff reviewed the report (*An Archaeological Site Assessment Survey of the Florida Inland Navigational District V-26 Dredged Material Management Area, Volusia County, Florida*, Florida Archaeological Services, Inc., August 2001) forwarded with your letter of April 21.

We note that no cultural resources were encountered in the V-26 disposal tract. In addition, we note that the dredge pipeline will not impact the unrecorded submerged/subsurface stone wharf near the mouth of the South Canal. This office therefore concurs with the determination that the proposed project will have no adverse effect on historic properties eligible for listing in the *National Register of Historic Places*.

In addition, we appreciate receiving the copy of the survey report for the V-26 Dredged Material Management Area which was not forwarded in 2001. The report will be forwarded to the Florida Master Site File office. If you have any questions concerning our comments, please contact Janice Maddox, Historic Sites Specialist, by electronic mail at [jmaddox@dos.state.fl.us](mailto:jmaddox@dos.state.fl.us), or by telephone at 850/245-6333. Your interest in protecting Florida's historic properties is appreciated.

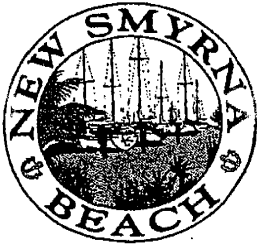
Sincerely,

  
Janet Snyder Matthews, Ph.D., Director, and  
State Historic Preservation Office

XC: Gordon M. Butler, Chief, Construction-Operations Division, USACE

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

<input type="checkbox"/> Director's Office (850) 245-6300 • FAX: 245-6435	<input type="checkbox"/> Archaeological Research (850) 245-6444 • FAX: 245-6436	<input checked="" type="checkbox"/> Historic Preservation (850) 245-6333 • FAX: 245-6437	<input type="checkbox"/> Historical Museums (850) 245-6400 • FAX: 245-6433
<input type="checkbox"/> Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476	<input type="checkbox"/> St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044	<input type="checkbox"/> Tampa Regional Office (813) 272-3843 • FAX: 272-2340	



# City of New Smyrna Beach

Office of the Mayor & City Commissioners

March 19, 2002

Colonel May  
U.S. Army Corps of Engineers  
South Atlantic Division, Jacksonville District  
P.O. Box 4970  
Jacksonville, Florida 32232-0019

Re: Intracoastal Boat Traffic Eroding National Register Eligible Site

Dear Colonel May,

The City of New Smyrna Beach is the site of the New Smyrna Colony founded by Andrew Turnbull in the mid-18th century. Perhaps the most publicly visible physical evidence of this 40,000-acre plantation settlement is the Old Stone Wharf (8VO4298). One can still see the coquina stones of this colonial wharf along the shoreline and in the waters that are now a part of the Intracoastal Waterway.

Wave action from boat traffic on the Intracoastal Waterway is adversely affecting the Old Stone Wharf site. The erosion is particularly severe given that the site is very close to the channel. This high-energy erosional impact is also destroying the prehistoric and historic midden deposits that are part of the site, and which that make up the shoreline north and south of the Old Stone Wharf. There is evidence at the site of careening and other ship repair activities. Unfortunately, there is no formal study of the site but the volunteer efforts have documented that the site is clearly eligible for the National Register.

It is beyond the expertise and the funding ability of the City of New Smyrna Beach to undertake a mitigation study or to preserve the Old Stone Wharf site and associated shoreline midden. It is clear that the adverse impacts to this site are the direct result of the Intracoastal Waterway. Therefore, we are requesting that the Army Corps of Engineers provide the expertise and funding needed to adequately address the preservation needs of this significant cultural resource. We will also encourage our local congressional leaders to support this preservation project and to support all efforts you can take to preserve this nationally significant resource.

The Old Stone Wharf and its associated midden is an important historical and scientific resource within our community. We must preserve this resource for the benefit of our community and as an important part of our nation's heritage.

Sincerely,

James Vandergriff, Mayor  
City of New Smyrna Beach

CC: Suzanne Kosmas, John Mica, & Grady Caulk, Army Corps of Engineers Archaeologist



October 2, 2001

Colonel May  
U.S. Army Corps of Engineers  
South Atlantic Division, Jacksonville District  
P.O. Box 4970  
Jacksonville, FL 32232-0019

Subject: Corps/FIND Dredging of the Intracoastal Waterway, SE Volusia County Area

Dear Sir:

I attended a FIND public information meeting on August 29, held in New Smyrna Beach. This meeting presented alternatives analysis for the upcoming dredging and dredged material placement projects for work to be done along this area of the east coast. At the meeting I inquired about FIND's proposed Alternative 1 and Site V-26 where material will be hydraulically dredged from the ICWW channel and pumped to this designated site. My concerns, shared by others in the archaeological community in this area, regards the use of a historic feature (South Canal, a.k.a. Gabardy Canal) in which dredge pipes are to be laid from the river west to Site V-26.

My question at the meeting was whether any adverse impacts to the South Canal would be caused by the placement of these dredge pipes or by the dredging. Mr. Roach, with FIND, indicated he did not know whether this would occur but he did make notes as I was speaking.

I am aware CORP archaeologists are knowledgeable about documented Florida Site File sites. However, some information provided for sites is rather scanty therefore I am writing to you, with copies to FIND, regarding known and probable sites, i.e., the South Canal, and other sites in its vicinity that may be impacted. The Turnbull Canal System, of which the South Canal is its southeastern end, is documented on the FL Site File system as 8VO7056. This extensive canal system was hand dug by indentured colonists and slaves who lived in the 18<sup>th</sup> Century British New Smyrna Colony/Smyrnea Settlement. An alternative name for the South Canal is Gabardy Canal, no doubt named for an 18<sup>th</sup> Century Italian indentured colonist, Antonio Gabardi, who came to New Smyrna in 1768. This canal is now the city limits separator between the cities of New Smyrna Beach and Edgewater. Current day New Smyrna Beach and Edgewater are located within portions of this large 18<sup>th</sup> Century plantation, that contained more than 40,000 acres.

There are two documented prehistoric sites at or near the South Canal. Portions of 8VO113, a Native American shell midden, were excavated by 18<sup>th</sup> C colonists near the eastern end of the canal. Shell midden can be seen today eroding from the southern banks of the canal near its eastern end at South Riverside Drive. A related prehistoric site, 8VO114, a sand mound, was documented slightly north of the canal. It has been destroyed so its exact location is not now known. No documented professional archaeological testing has been conducted on either site.

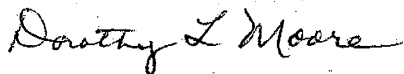
Historical documentation states three wharves were constructed by the 18<sup>th</sup> Century colony but the location of only one is currently known, the Old Stone Wharf (8VO4298). It is probable that



another wharf was placed at the mouth of the South Canal, several miles south of 8VO4298. If so, remains of this wharf are not visible today but subsurface remnants may still be in-situ. At this time, a sand bar has built up at the South Canal's mouth. If this blockage is removed by/for dredging purposes, an archaeological survey of this area should be taken prior to its removal to ascertain whether another 18<sup>th</sup> Century wharf was placed there.

Your attention to our concerns regarding adverse impacts to the South Canal and any adjacent prehistoric and historic sites would be greatly appreciated.

Sincerely,



Dorothy L. Moore  
P.O. Box 504  
New Smyrna Beach, FL 32170

cc: David Roach, FIND District Manager, Jupiter  
Grady Caulk, Archaeologist, CORPS, Jacksonville  
Division of Historical Resources, Tallahassee  
Bureau of Archaeological Research, FL Site File Office, Tallahassee  
City of New Smyrna Beach  
City of Edgewater

December 3, 2001

Mr. Glenn Schuster  
Jacksonville District Office  
U.S. Army Corps of Engineers  
400 West Bay Street  
Jacksonville, FL 32202

Dear Mr. Schuster:

Enclosed are the analytical results for the three New Smyrna Beach sediment samples collected from the channel near Chicken Island on September 28, 2001.

All data were determined in accordance with published procedures (*EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, December 1996, 3rd Edition incl. Updates I-III). Our laboratory is NELAP-certified by the Florida Department of Health (#E82001) and our CompQAP is approved by FDEP (#870017G).

Fecal coliform analyses were performed by ELAB, Inc. (FL Cert #E83079) of Ormond Beach, Florida.

If you have any questions concerning this report, please contact me.

Sincerely,

Bryan F. Cotter  
Project Manager

/cms

Enclosures

**ANALYTICAL CASE NARRATIVE**  
(Page 1 of 1)

Mr. Glenn Schuster  
Jacksonville District Office  
U.S. Army Corps of Engineers  
400 West Bay Street  
Jacksonville, FL 32202

PPB Labs Project #: 96-033  
Date: December 3, 2001  
REF: Contract No. DACW17-97-D-0001

Delivery Order No. 0078

---

Three sediment samples and one duplicate sampled from the New Smyrna Beach area collected on September 28, 2001 were received at PPB Environmental Laboratories, Inc. in Gainesville, FL in good condition on September 28, 2001. These samples were collected by Water and Air Research, Inc. of Gainesville, FL and PPB for the U.S. Army Corps of Engineers and analyzed for fecal coliforms and metals using EPA Method SW846.

The fecal coliform samples were received at ELAB, Inc. of Ormond Beach within the 6-hour holding time.

All quality control (QC) results were within PPB Environmental Laboratories, Inc. QC criteria.

---

Project Manager

Analytical Results for New Smyrna Beach Sediment Samples Collected September 28, 2001 (Page 1 of 2)

STATION ID		E-NSB01-1		E-NSB01-1DUP	
LAB NO.		212558		212559	
FECAL COLIFORMS	MPN/g	430		25	
PERCENT SOLIDS	%	58.1		61.7	
		<u>Dry</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>
AS_S_ICP	ug/g	<0.4	<0.3	0.8	0.5
BA_S_ICP	ug/g	1.3	0.8	1.6	1.0
CD_S_ICP	ug/g	1.2	0.7	0.5	0.3
CR_S_ICP	ug/g	2.0	1.2	2.6	1.6
PB_S_ICP	ug/g	<0.3	<0.2	1.0	0.6
HG_S_CVAA	ug/g	<0.10	<0.06	<0.10	<0.06
NI_S_ICP	ug/g	<0.4	<0.2	<0.3	<0.2
AG_S_AA	ug/g	<0.020	<0.012	<0.020	<0.012

Analytical Results for New Smyrna Beach Sediment Samples Collected September 28, 2001 (Page 2 of 2)

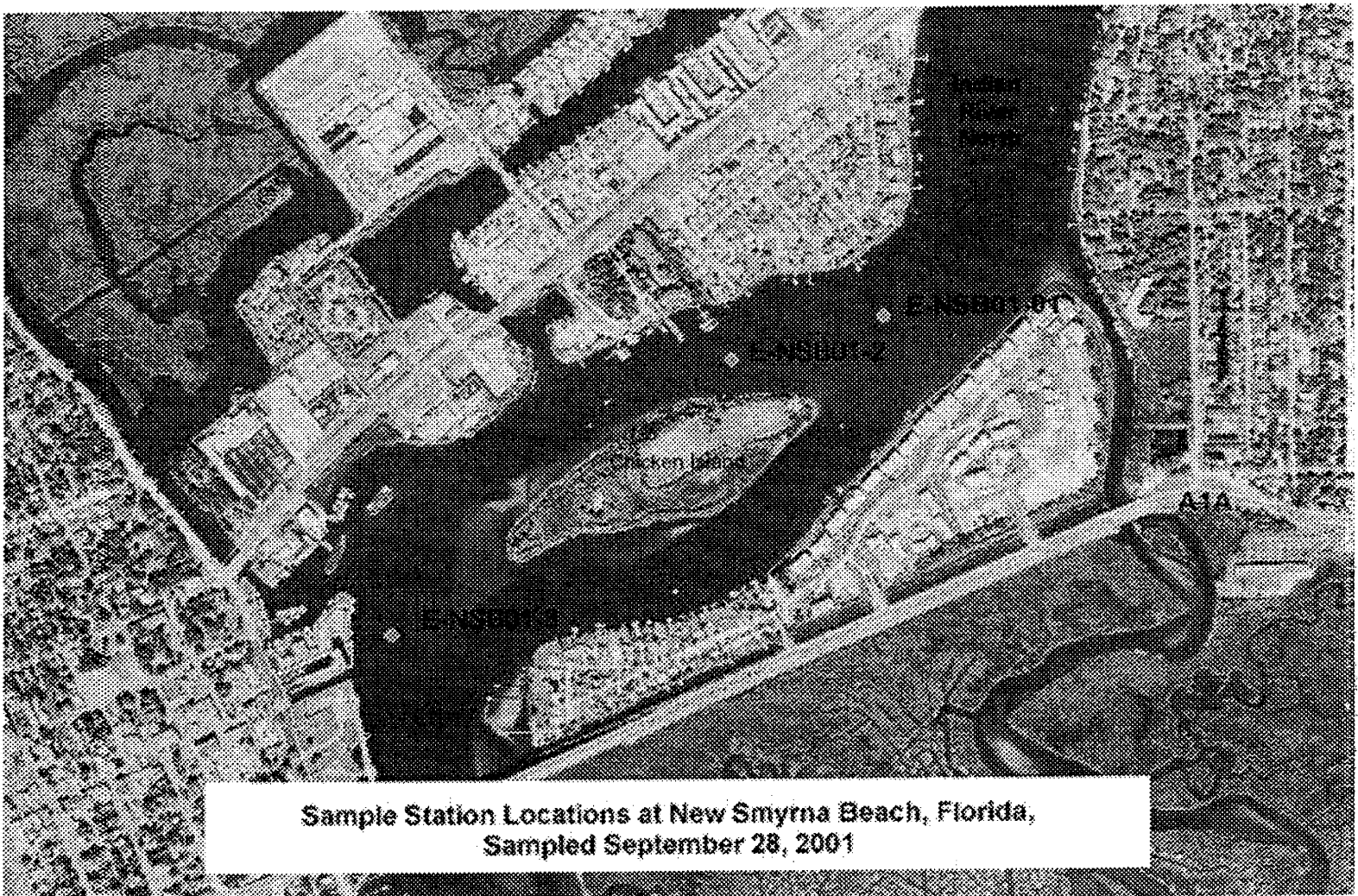
STATION ID		E-NSB01-2		E-NSB01-3	
LAB NO.		212560		212561	
FECAL COLIFORMS	MPN/g	66		28	
PERCENT SOLIDS	%	69.2		67.4	
		<u>Dry</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>
AS_S_ICP	ug/g	0.8	0.6	<0.3	<0.2
BA_S_ICP	ug/g	2.2	1.5	2.4	1.6
CD_S_ICP	ug/g	0.6	0.4	0.8	0.5
CR_S_ICP	ug/g	3.8	2.6	3.5	2.4
PB_S_ICP	ug/g	0.4	0.3	0.4	0.3
HG_S_CVAA	ug/g	<0.10	<0.07	<0.10	<0.07
NI_S_ICP	ug/g	1.4	1.0	<0.3	<0.2
AG_S_AA	ug/g	<0.020	<0.014	<0.025	<0.017

Depth Profile *In Situ* Data from New Smyrna Beach Samples Collected September 28, 2001

Station ID	NAD83		Depth (feet)	Tidal Cycle	Sea State	Weather
	Coordinates	Date and Time				
E-NSB-01-1	29°01.56.4N	09/28/01	15.91	Outgoing	Smooth wavelets	Wind 13 mph, partly sunny
	80°54.30.6W	1150				
E-NSB-01-1 dup	29°01.56.4N	09/28/01	15.91	Outgoing	Smooth wavelets	Wind 10 mph, partly sunny
	80°54.30.6W	1220				
E-NSB-01-2	29°01.54.1N	09/28/01	10.33	Outgoing	Calm ripple	Wind 7 mph, partly sunny
	80°54.42.3W	1315				
E-NSB-01-3	29°01.36.8N	09/28/01	14.76	Outgoing	Smooth wavelets	Wind 7 mph, partly sunny
	80°55.07.8W	1100				

Depth Profile *In Situ* Data from New Smyrna Beach Samples Collected September 28, 2001

Station ID	Sampling Depth (feet)	Temp (deg C)	pH (Units)	Dissolved Oxygen (ppm)	Salinity (ppt)	Conductivity (umhos/cm)	Turbidity (NTU)
E-NSB-01-1	1.0	26.6	7.93	5.00	31.9	48,762	7.76
	8.2	26.7	7.96	4.98	32.0	48,976	8.57
	14.1	26.7	7.97	5.11	32.2	49,119	7.10
E-NSB-01-1 dup	1.0	26.6	7.95	4.81	31.5	18,273	6.98
	8.2	26.6	7.97	4.88	31.9	48,716	7.88
	14.1	26.7	7.98	4.93	32.1	48,953	8.35
E-NSB-01-2	1.0	26.9	7.85	5.16	30.3	46,546	7.37
	5.2	26.8	7.85	5.09	30.3	46,499	9.54
	8.5	26.8	7.85	4.81	30.2	46,410	11.1
E-NSB-01-3	1.0	26.4	7.84	5.36	32.0	48,571	6.27
	7.2	26.5	7.93	5.47	32.5	49,616	5.60
	13.1	26.5	8.01	5.30	34.0	51,531	5.55

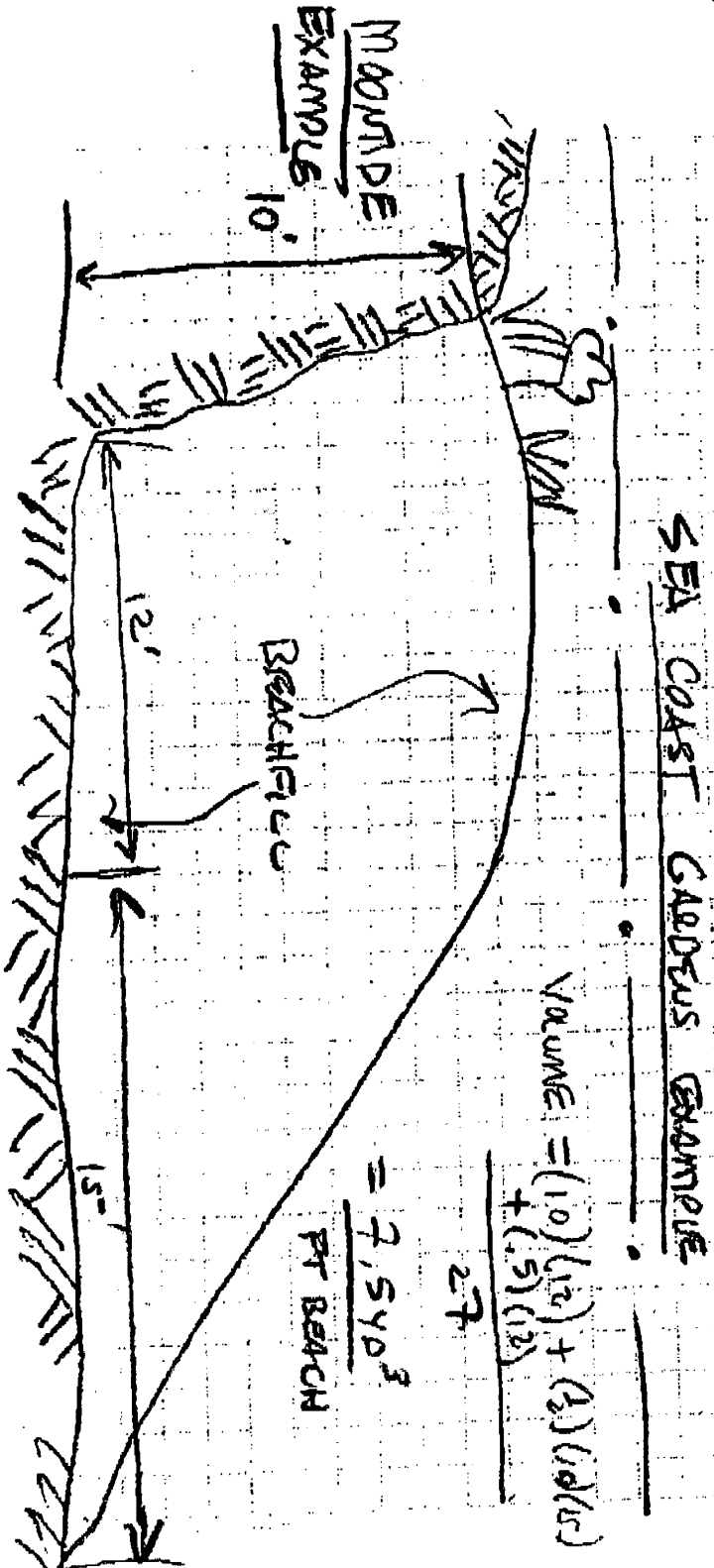
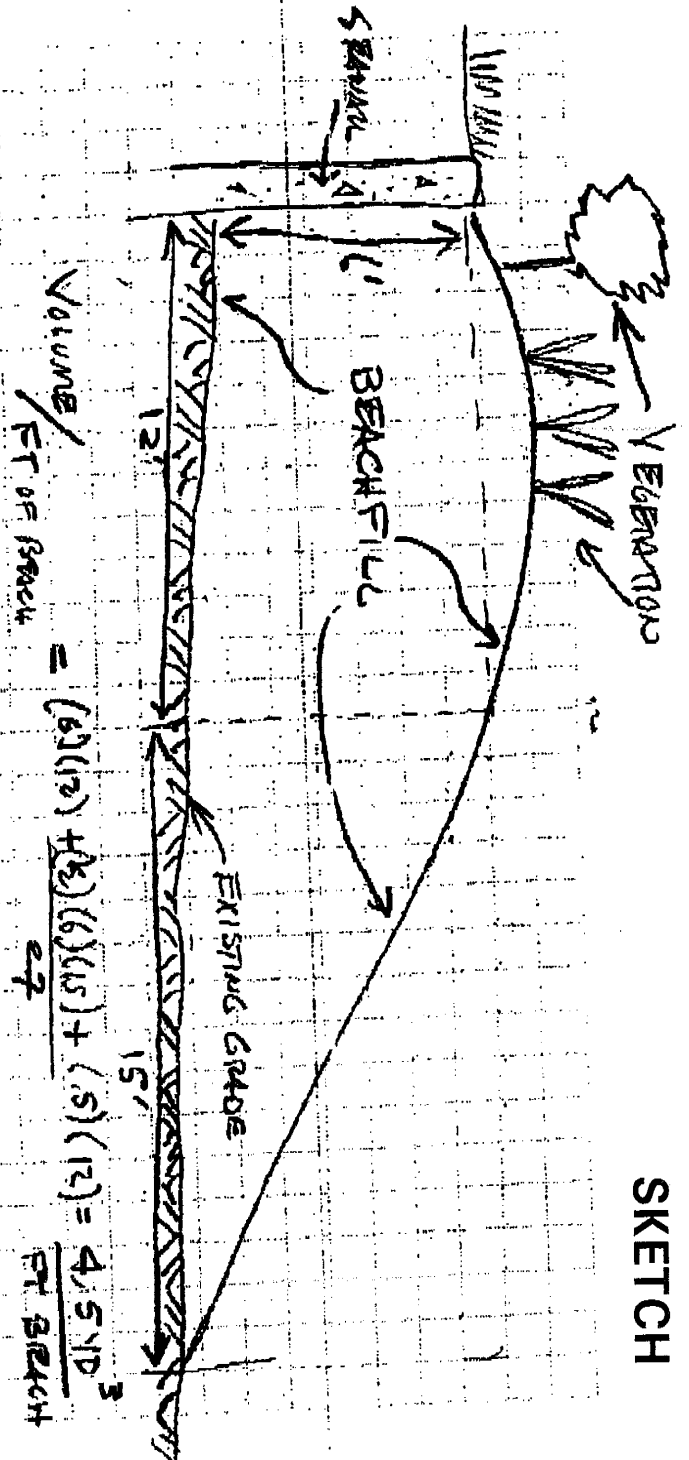




MARSHALL, PROVOST & ASSOCIATES  
 340 north causeway  
 new Smyrna beach, florida 32169  
 (904) 427-0694 FAX (904) 427-0889

PROJECT \_\_\_\_\_ NO. \_\_\_\_\_  
 SUBJECT \_\_\_\_\_ SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_  
 BY \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_ DATE: \_\_\_\_\_

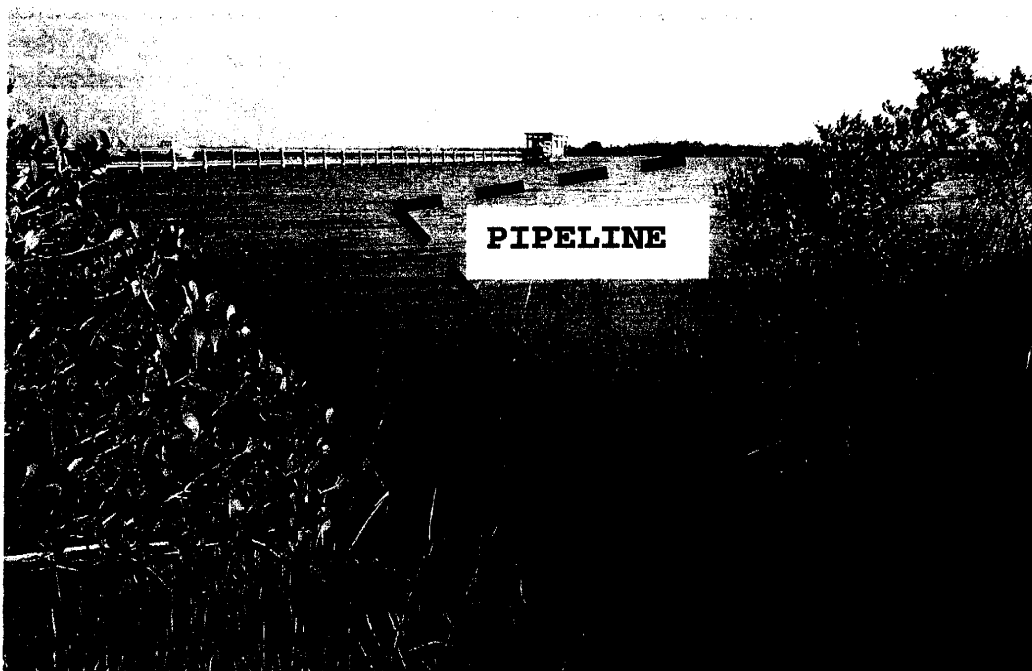
# DUNE SKETCH



## **APPENDIX D - PHOTOGRAPHS**



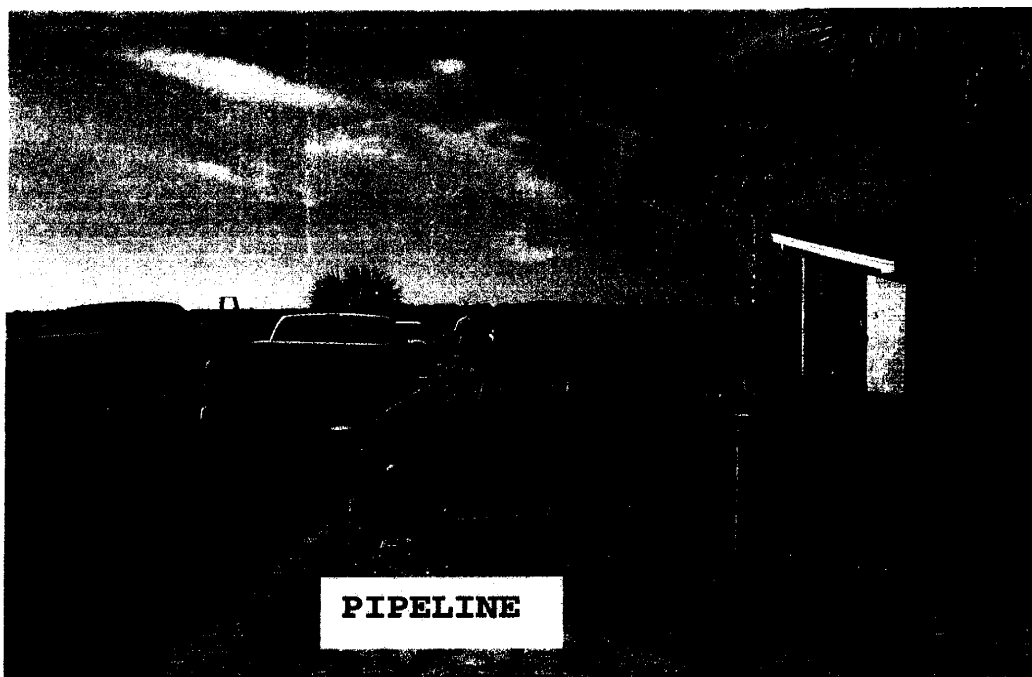
Looking west into the mouth of South Canal (going to V26)



Looking east from the mouth of South Canal



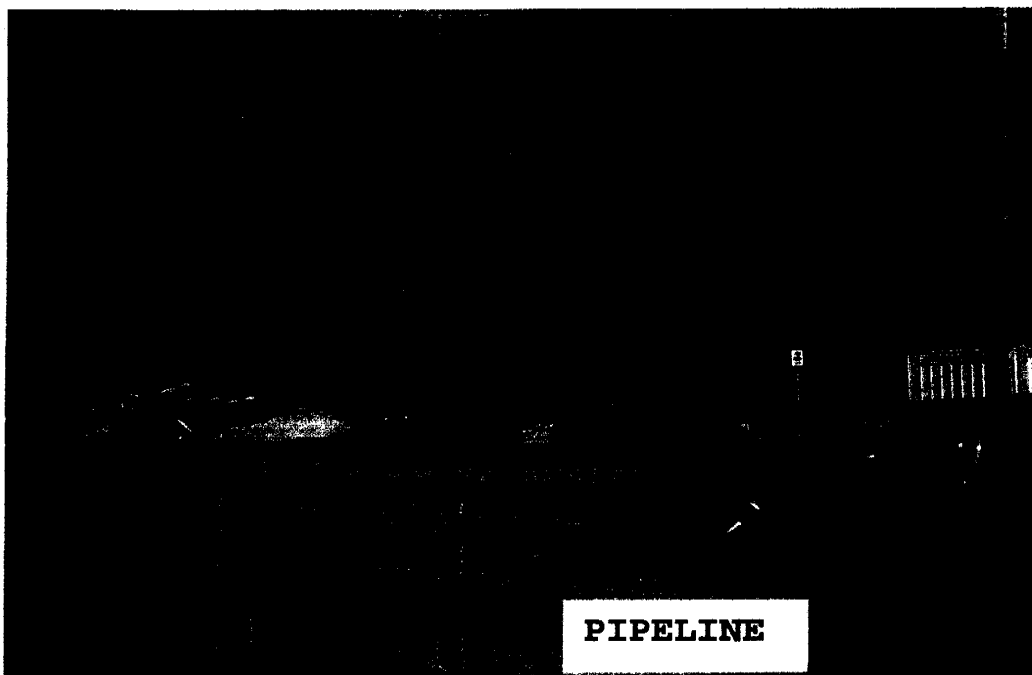
Again, looking west at the entrance to South Canal



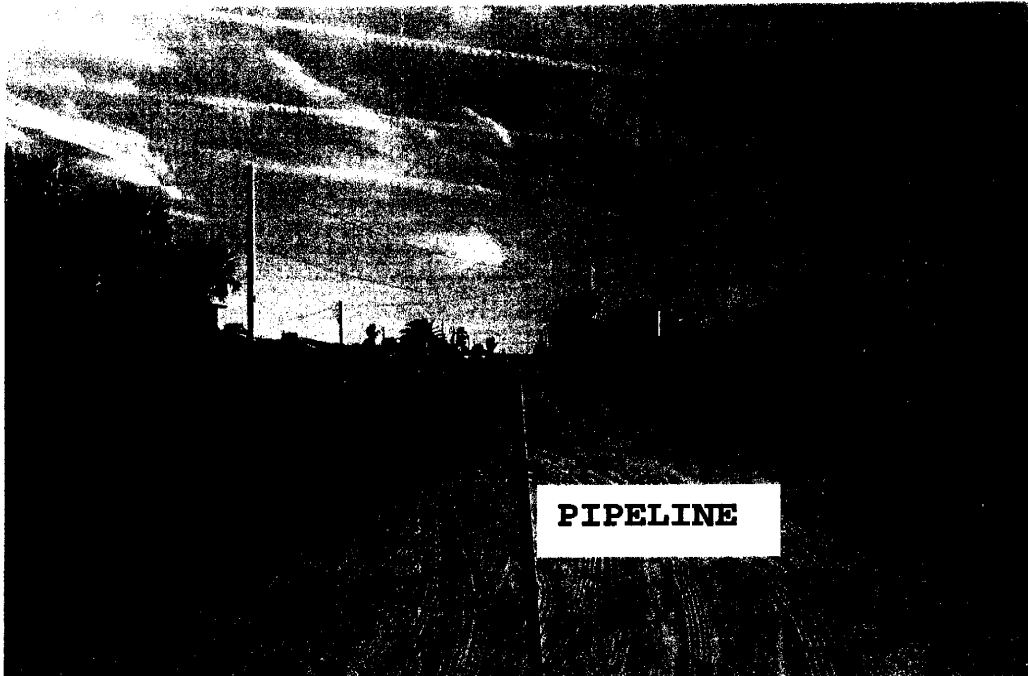
Looking west at the IWW at western end of Sapphire Road



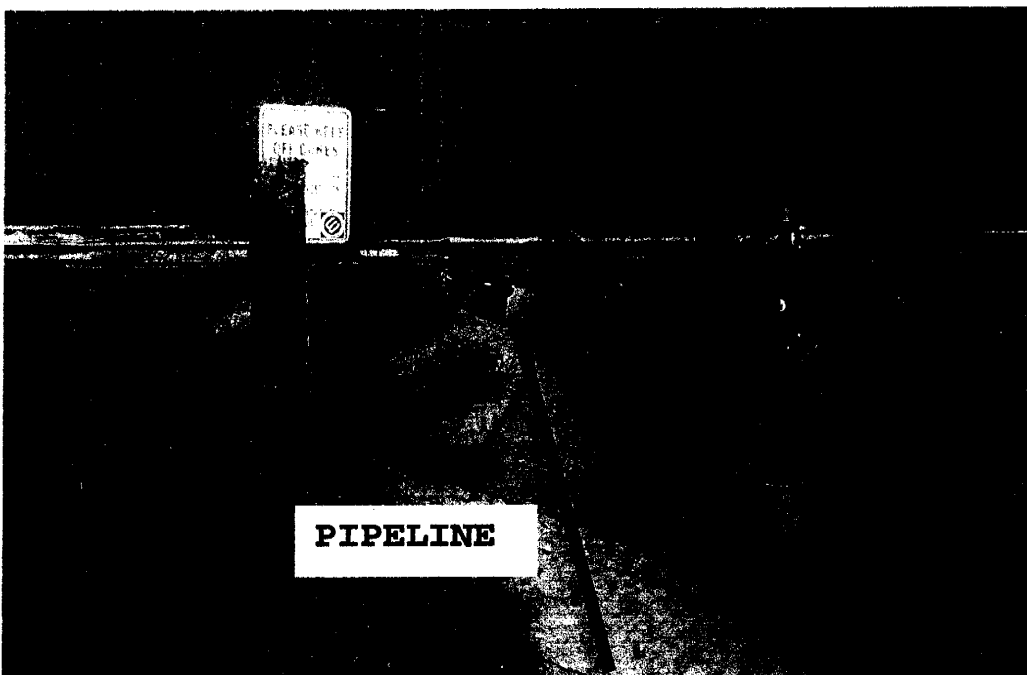
Looking east toward ocean from western end of Sapphire Road



A closer look at Sapphire Road and Bark Park (looking east)



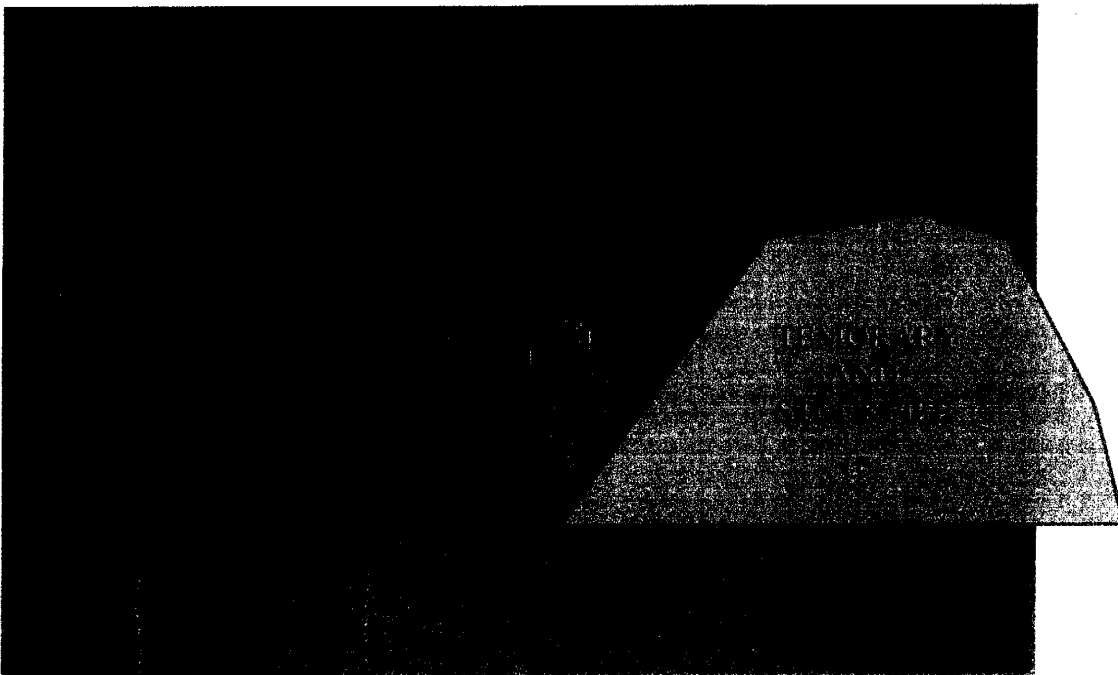
Looking west from eastern end of Sapphire road near ocean



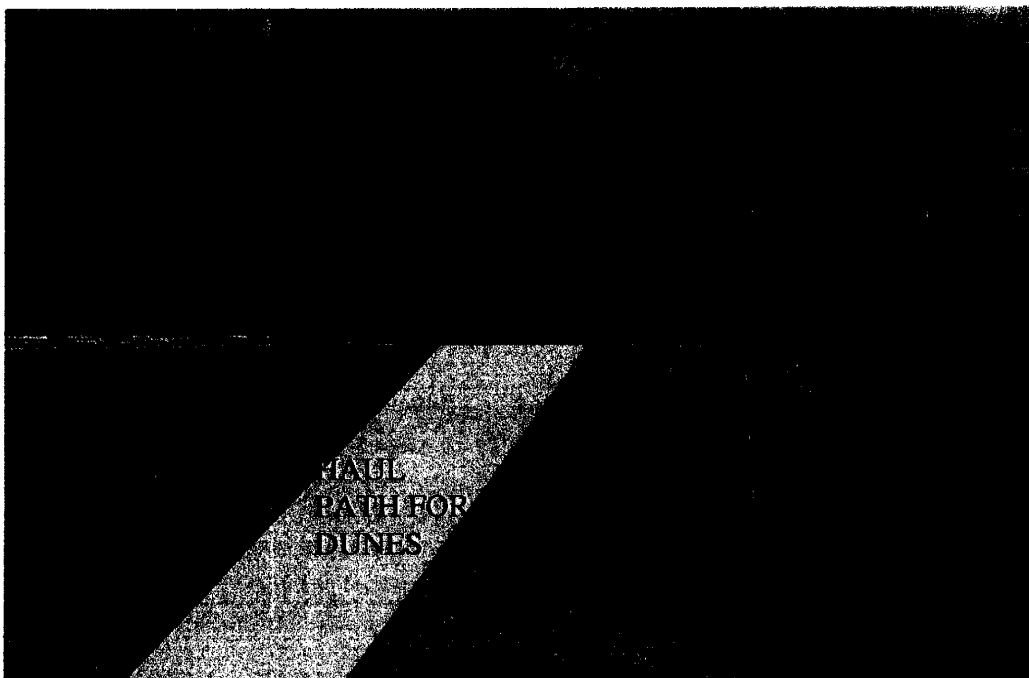
Looking east from eastern end of Sapphire Road down narrow footpath to ocean.  
This will be the pipeline access corridor.



Looking north into Bark Park from eastern end of Sapphire Road.



Looking north along beach from end of footpath – notice the “no parking” posts.  
This will be the stockpile area.



Looking south along beach from end of footpath. Dune construction area at various locations over 15,000 feet.



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